

CHAPTER 10
Naval Aviation Maintenance Program Standard Operating Procedures
(NAMPSOPs)

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CHAPTER 10

Naval Aviation Maintenance Program Standard Operating Procedures (NAMPSOPs)

10.1 Maintenance In-Service Training Program (NAMPSOP)

10.1.1 Introduction

10.1.1.1 The Maintenance In-Service Training Program establishes policy, responsibilities, and requirements for implementing training within aviation maintenance activities.

10.1.1.2 References:

- a. MCO P4790.20, ITSS MATMEP Procedures.
- b. OPNAVINST 5100.19, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat.
- c. OPNAVINST 5100.23, Navy Occupational Safety and Health (NAVOSH) Program Manual.
- d. NAVEDTRA 43100-1G, PQS Management Guide.
- e. OPNAVINST 3500.34, Personnel Qualification Standards (PQS) Program.
- f. NAVPERS 18068F, Navy Enlisted Manpower and Personnel Classifications and Occupational Standards.

10.1.2 Discussion

10.1.2.1 Maintenance IST maintains and increases technical knowledge and proficiency. It is a command responsibility, with all supervisors ensuring assigned personnel are adequately trained to safely perform their duties. This training represents a major contribution to the Navy's overall training effort and requires a systematic training program. Navy O-level maintenance ratings receive Apprentice, Journeymen and Master level proficiency qualification under the initiative called QPT.

10.1.2.2 Lectures, IMI, videotapes/films, PQS, required reading, and OJT are integral components and must be coordinated to satisfy each individual activity's particular requirements.

10.1.2.3 OJT consists of personnel performing maintenance tasks, by demonstration and simulation, under the supervision of designated, qualified personnel. Experienced personnel instruct, demonstrate, and impart their skills to the less experienced. A maintenance task, applicable maintenance instructions, and tools/test equipment are required to perform OJT. The trainee learns by seeing the job done and gains experience by participating in the work. OJT encompasses maintenance tasks ranging from basic administrative duties to complex aircraft/equipment testing, troubleshooting, and repair. A well-defined and comprehensive OJT syllabus will ensure maintenance personnel receive the training and acquire the skills necessary to meet the command's operational commitments. OJT should be performed at every opportunity. OJT is to be documented for all maintenance-related tasks until the trainee is qualified/proficient in that task. OJT is not required to be documented daily, only upon task completion. Once an individual is certified by the Work Center Supervisor as proficient in a task area, OJT documentation for that task is no longer required.

10.1.2.4 The QPT Program is in-service training for aviation units designed to encompass and standardize technical training and quantify maintenance proficiency levels across all aviation platforms. QPT enables unit leadership to compare its Total Force Readiness to its Mission Readiness, calculate the effectiveness

and efficiency of training, and prioritize training funding requirements by providing measurable standards of proficiency. QPT is designed to ensure maintenance technician proficiency relative to the expectations associated with the technician's pay grade. QPT is part of each enlisted maintenance technician's ongoing training continuum and individuals are encouraged to continually progress towards the next higher QPT certification.

10.1.2.4.1 QPT certification levels and syllabi have been structured to correspond with Navy Sea-Warrior mandated progression of Apprentice, Journeyman and Master to indicate the corresponding skill level to be attained in professional development. QPT syllabus content and qualification timeframes are tailored for each QPT certification level and can be tailored to account for past experience per Type Wing or stand-alone command procedure.

10.1.2.4.2 QPT certification levels and syllabi are as follows:

a. Qualified and Proficient Apprentice (QPA). Generally for E-4 and below personnel, this syllabi includes general and rating specific items addressing flight-line and work place safety, basic aircraft servicing and inspection, SE licensing, basic maintenance documentation/NALCOMIS, minimal rating knowledge (typically limited to the identification and removal of components), the identification, use and handling of hazardous material, and any additional qualifications deemed appropriate for QPA certification. QPA proficiency can be compared to that of a Plane Captain.

b. Qualified and Proficient Journeyman (QPJ). Generally for E-5 and E-6 personnel, this syllabi includes incomplete QPA items for personnel new to the T/M/S, more in-depth technical data specific to the T/M/S aircraft (T/M/S specific PQS), advanced maintenance documentation/NALCOMIS, shop and shift workload management, and any additional qualifications deemed appropriate for QPJ certification. QPJ certified individuals are those generally recommended for CDI qualification.

c. Qualified and Proficient Master (QPM). Generally for E-7 and E-8 personnel, this syllabi includes items appropriate for the efficient and safe management of aircraft maintenance/production and the administration of personnel.

10.1.2.5 MATMEP includes the training associated with all aircraft, Marine Corps maintenance personnel, O-level and FRC aircraft SE maintenance personnel, and other ground aviation support personnel in Occupation Fields 59 and 70. The program primarily addresses productive direct labor on aircraft, aircraft SE, removed components from aircraft, and equipment pertinent to Occupation Fields 59-65, 70, and MOS 6694. In addition, ITSS/MATMEP provides a means for documenting training related to indirect (functional) tasks, such as work center duties, QA, and Maintenance Control, that are essential to the overall performance of the maintenance organization and to the career development of the individual Marine.

10.1.2.6 ASM is an unclassified training management tool that supports AMTCS from the schoolhouse to the fleet. It is a software application designed for AMTCS to identify job task requirements, assist in determining proficiencies, document qualification/certifications, and track completed training and aviation maintenance personnel progress within their respective QPT/MATMEP. ASM will not replace requirements established by OPNAVINST 8020.14 for the Explosive Handling Personnel Qualification and Certification Program.

10.1.2.7 MediaTrax is an on-line IMI repository for aviation maintenance IMI courses. The MediaTrax library contains more than 1,200 modules of training that includes, but is not limited to, eleven T/M/S aircraft, Ordnance, I-level Avionics, and SE. The maintenance IST IMI available via MediaTrax is designed to provide remedial and refresher training in a self-paced setting, or it may be used by work center supervisors in a group setting to support unit level technical training. MediaTrax allows the user to browse the courseware repository using several search criteria including T/M/S platform, keywords, and

Catalog Tracking Number (CTN). It also allows the user to request specific IMI and track the status of the order. Upon receipt of an order, the training DVD or CD is mailed directly to the requesting activity at no cost. Orders for maintenance IST IMI can be made through the MediaTrax website (<https://amtcs.kpt.nuwc.navy.mil/mediatrax>).

10.1.2.8 TTCMS is an on-line tool that supports life-cycle management related to the upkeep and revision of training procedures, training applications, software, and hardware for IMI items. When a deficiency is noted, fleet and schoolhouse users submit a TTCCR via the website (<https://amtcs.kpt.nuwc.navy.mil/ttcms>). Users can track the status from TTCCR initiation through the approval process to final resolution. TTCMS also maintains historical reference data including names, initiation dates, notes, and dates of disposition.

10.1.3 Responsibilities

10.1.3.1 MAWs shall coordinate and assist activities in implementing the maintenance training syllabus outlined in the ITSS/MATMEP per MCO P4790.20. EAF shall maintain all training requirements per MCO P3500.67 and MCO 5500.14.

10.1.3.2 Navy Type Wings/FRCs/MAW or MAG/AIMDs/standalone activities shall:

a. Identify training requirements with standardized syllabi supporting lectures/IMI for each rate and work center for each T/M/S aircraft or weapon system supported. This shall be a joint effort between the fleet and supporting training activities. Lead Type Wings shall coordinate to ensure commonality among similar T/M/S. Training requirements shall include the following minimum elements:

(1) Formal training courses (FASOTRAGRU, CENNAVNTECHTRAU, and FRC). Specify courses related to:

- (a) General administrative duties, for example, Work Center Supervisor and SCIR.
- (b) General qualification, for example, flight deck fire fighting and SE Phase I
- (c) Specific technical skills, for example, advanced radar and flight control rigging.

(2) Applicable QPT and MATMEP requirements.

(3) Required reading.

(4) Videotape/film/IMI requirements.

(5) SE licensing requirements.

(6) Maintenance training lessons/IMI to be given at the activity level (overview of the major systems/tasks covered in the OJT syllabus (Figure 10.1-1), as a minimum. Recurring maintenance training lesson requirements should be kept to a minimum.

b. Provide input to formal training courses via HPPRs that evaluate courses for content to ensure training is being accomplished based on current systems and fleet demands.

c. Continually review and update standardized QPT and MATMEP requirements.

d. Manage and coordinate implementation, development, and improvement of the ASM and:

- (1) Manage and update all qualification/certification task lists and test data banks within ASM.

(2) Ensure ASM tests adequately measure comprehension of various training syllabus elements and assigned SMEs have access to ASM for test question bank review.

(3) Liaise with supported activities to review ASM Task Lists and ASM tests for currency and adequacy.

NOTES: 1. TECOM (ATB) will be the controlling activity for USMC Aviation Maintenance Training changes/updates to ASM. TECOM (ATB) will manage and coordinate updates to Marine Corps training qualification/certification/licensing task lists and test data banks within ASM.

2. MAW/MAG (MALS) will consolidate all related submissions and forward to TECOM (ATB) for appropriate action.

e. Ensure all aspects of ASM are in compliance and meet the minimum requirements per this instruction.

10.1.3.3 The MO shall:

- a. Designate, in writing via the MMP, the AMO as the Maintenance Training Program Manager.
- b. Designate an E-6 or above as ASM Fleet Administrator. For those commands with detachments, designate a competent individual as the ASM Fleet Administrator specifically for the detachment/deployment and suspend that designation upon return.
- c. Designate all PQS and QPT/MATMEP qualifiers based on technical knowledge and experience levels.
- d. Develop local command procedures (as required) per [Appendix D](#).
- e. Ensure training is accomplished for both permanently assigned and TAD personnel.
- f. Provide appropriate guidance and direction to implement, administer, and evaluate TYCOM approved QPT, MATMEP, and ASM.
- g. Ensure all personnel fully participate in the training program and comply with established policies and procedures.
- h. Ensure liaison and interface between training resources and individuals requiring refresher ASM training.
- i. Provide the CO with applicable reports.
- j. Distribute all training requirements in the MMP or separate Monthly Maintenance Training Plan.

10.1.3.4 The Program Manager/FRC equivalent shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Manage all areas of maintenance training for the department.
- b. Closely monitor individual and unit QPT/MATMEP qualification/certification progress.
- c. Be responsible for implementing, administering, and evaluating ASM and liaising with the ASM Fleet Administrator on all ASM related issues.
- d. Ensure training is conducted throughout the command to provide adequate knowledge of the ASM software system.

- e. Be knowledgeable of MCO P4790.20, OPNAVINST 5100.19, OPNAVINST 5100.23, NAVEDTRA 43100-1G, OPNAVINST 3500.34, NAVPERS 18068F(Volume II), and this instruction.
- f. Issue a training schedule for NAVOSH/safety training topics listed in [Figure 10.1-2](#).
- g. Ensure NAMP programs/processes training is provided per [paragraph 10.1.4.1](#).
- h. Ensure NAVOSH/Safety Program training is provided per [paragraph 10.1.4.2](#).
- i. Use CSEC information and reports to aid in identifying specific areas of concern and to determine what steps are required for program/process improvement.
- j. Review Division Officer plans and organization to satisfy training requirements.
- k. Maintain a program file to include; applicable POCs; program related correspondence and message traffic; and applicable references or cross reference locator sheets.
- l. Manage the SE Training and Licensing Program (O-level).

NOTE: The SE Division Officer manages the SE Training and Licensing Program for I-level.

- m. Monitor appropriate personnel documents (EDVR, AMD, and standard transfer directives) to ensure personnel being assigned already possess the requisite skills, or will receive training prior to arrival, commensurate with the billet/DNEC.
- n. Coordinate with division officers/chief petty officers and work center supervisors in the generation of local supplemental lesson guides when IMI lesson guides are not available.
- o. Develop and implement a comprehensive Turnaround Training Plan to be executed between deployment cycles that identifies and tracks all operational training requirements. The Training Plan shall identify training that is taught outside of the command's capability and shall be used to obtain, assign and track training/course quotas. Commands that do not deploy (FRS, AIMD, FRC) shall develop an Annual Training Plan similar in content and purpose. Squadrons that have both a home guard and deploying detachments shall develop a Training Plan that encompasses both the home guard and deploying detachment training requirements.
- p. Obtain quotas to support training requirements.

10.1.3.5 The MP&T Coordinator, normally a senior enlisted (E-9), performs staff functions under the MO/AMO.

10.1.3.5.1 The MP&T Coordinator is only assigned to CV IMAs and the larger (500 or above manning during the year, including TAD personnel) Navy shore IMAs which provide I-level support for a significant number of aviation activities.

10.1.3.5.2 The MP&T Coordinator shall:

- a. Assist and advise the MO in the areas of enlisted performance, billet requirements, training, and manning within the department.
- b. Make recommendations to the MO concerning improvements to performance/productivity programs, manpower requirements and utilization planning, and human resources policies.

- c. Ensure all divisions conduct training sessions to improve quality of performance and enhance promotional opportunities of assigned personnel.
- d. Participate in the assignment of senior petty officers within the department.
- e. Direct inspections of assigned spaces and personnel.
- f. Act as liaison between other activities/departments in regards to personnel TAD and training matters.
- g. Act as equal employment opportunity coordinator for the department and ensure all assigned personnel understand their rights/responsibilities under this CNO sponsored program.

10.1.3.6 The SEAOPDET Coordinator shall:

- a. Manage the SEAOPDET Program, reporting directly to the AMO, and ensure SEAOPDET personnel are trained.
- b. Coordinate, with the LCPO and MP&T Coordinator, resolution of personnel and program deficiencies.
- c. Act as liaison with other supported activities/departments regarding SEAOPDET personnel, training, and logistic matters.

10.1.3.7 The QA Officer shall:

- a. Ensure audits are performed using CSEC per [paragraph 10.7](#).
- b. Ensure completed special audits are routed via appropriate program managers.
- c. Provide updates to all ASM qualification/certification task lists and test question data banks (as necessary).

10.1.3.8 The ASM Fleet Administrator shall:

- a. Be the command SME for all aspects pertaining to ASM.
- b. Liaise with the site representative and ASM Program Manager and stay abreast of all issues that pertain to ASM.
- c. Develop and conduct ASM training for all required command personnel.

NOTE: Site representatives and the ASM Help Desk are to be used in requesting formal training from the ASM Support Team. Live video teleconference and web-based training are available upon request and can be provided to groups of any size (as required).

d. Submit ASM discrepancies/deficiencies or change recommendations to Type Wings/AIMDs/FRCs/MAWs or MAGs via the Program Manager. Type Wings will interface with Naval Undersea Warfare Center Keyport and NAVAIR PMA-205 as applicable for their T/M/S.

NOTE: Squadrons are not authorized to make any changes within ASM without Type Wing approval.

- e. Monitor defect reports with the ASM Help Desk (as applicable).

10.1.3.9 Division officers shall:

- a. Plan and organize NAVOSH/safety and other training requirements for all personnel.
- b. Tailor the QPT/MATMEP for each individual to account for past experience, training, and ASM progress. Include lectures, IMI, and OJT, supplemented by required reading. Each quarter, review progress in attaining qualifications. Quarterly review of the Qualification/Certification Record or ASM (if implemented) may be delegated to the Division or Branch Chief Petty Officer/NCOIC.
- c. Perform an initial review of each Qualification/Certification Record, Naval Reserve Training/Qualification Jacket, MATMEP, and ASM within 30 days of an individual's arrival to the Maintenance Department and quarterly thereafter. Quarterly review of the Qualification/Certification Record, Naval Reserve Training/Qualification Jacket, MATMEP, and ASM may be delegated to the Division or Branch Chief Petty Officer/NCOIC. Quarterly reviews shall be evenly spaced. For example, they should not be performed during the last month of a quarter and then again in the first month of the next quarter.

NOTE: Tailoring of QPT syllabus at Navy OMAs to account for past experience is determined by the cognizant Type Wing.

- d. Review CSEC reports, audits, special audits, 3M summaries, ASM Reports, and other available data to determine when additional NAMP programs/processes training is required.
- e. Ensure program managers and system experts provide timely training.
- f. Maintain a proper balance between maintenance and required training to ensure a critical mass of QPTs are on hand.
- g. Actively track qualification progress for assigned personnel.
- h. Report division training and qualification status to the Maintenance Training Program Manager.
- i. Assign personnel required billets and collateral duties within ASM.
- j. Brief newly assigned personnel on qualification requirements, QPT career level completion time lines and expectations.

10.1.3.10 Work center supervisors shall:

- a. Ensure all completed NAVOSH, Safety, NAMP, and technical training is documented in the individual's qualification/certification record.
- b. Ensure NAVOSH/safety and other training is conducted through lectures and required reading. Professional/Technical training shall be conducted by the most qualified technicians, typically a Second Class Petty Officer or above or a CDI.
- c. Interview each individual and review qualification/certification record in order to determine and recommend to the Division Officer an appropriate training syllabus.
- d. Ensure OJT is conducted by demonstration and simulation under supervision of qualified work center personnel. Sign off qualification in OJT task areas only after individuals have demonstrated sufficient knowledge and skill to independently perform the task/duty.
- e. Ensure completed training is properly documented in the individual's qualification/certification record or ASM in a timely manner.

f. Ensure transferring individuals check out with appropriate personnel and collect their qualification/certification record and all original certification/designation letters prior to transfer. For commands using ASM, ensure each individual has a digital version of their entire record.

g. Assign appropriate training tasks within ASM to personnel upon check-in.

h. Recommend technicians to the chain of command for final qualification.

i. Ensure training is conducted within the work center to provide adequate knowledge of the ASM software system.

j. Review syllabi, lesson guides, and IMI lessons to ensure material is updated and current. Submit discrepancies or deficiencies to the ASM Fleet Administrator for forwarding to the respective Type Wing for approval.

10.1.3.11 Program managers shall:

a. Actively be involved in all aspects of their programs and are responsible for overall program condition.

b. Review CSEC reports and audits to look for indications of whether additional training is required, and specifically who needs it.

10.1.4 Procedures

10.1.4.1 NAMP programs/processes training is conducted through lessons. A program expert, normally the program manager/monitor, shall provide the training individually or during command indoctrination course of instruction.

10.1.4.1.1 Indoctrination training per NAMP Training Requirements (Figures 10.1-3 and 10.1-4), shall be provided to personnel within 30 days of reporting to the Maintenance Department, but may be extended to 60 days if mitigating circumstances exist. It need not be in any specific format, but shall provide sufficient time to complete requirements using the applicable NAMPSOP chapter as a guide. Command indoctrination may be tailored to accommodate different levels of experience of reporting personnel. Accomplished indoctrination training (Figure 10.1-5) shall be recorded in the qualification/certification record.

10.1.4.1.2 Indoctrination training is not designed to replace qualification training required for collateral duties, for example, Dispersed Technical Publications Librarian and Work Center Tool Control Petty Officers. Specific training directly related to the duties and responsibilities of a collateral duty shall be provided prior to collateral duty assignment.

10.1.4.1.3 Follow-on training shall be accomplished when directed by higher authority and as dictated by local requirements or conditions.

10.1.4.2 The training requirements to support the NAVOSH/Safety Program are extensive. Figure 10.1-2 is an example of the format to document NAVOSH training requirements for forces afloat and ashore. Activities shall review OPNAVINST 5100.19 and OPNAVINST 5100.23 to ensure all minimum training requirements are completed. Training guides can be downloaded from the Naval Occupational Safety and Health, and Environmental Training Center web site, <http://www.safetycenter.navy.mil/training>. If commands do not have this capability, NAVOSH training guides can be requested through the Naval Inventory Control Point, Philadelphia, PA, at DSN 442-2626 or COMM (215) 697-2626. Additionally, the Defense Automated Visual Information System/Defense Instructional Technology Information System

(DAVIS/DITIS) web site, <http://dodimagery.afis.osd.mil/>, provides video cassettes and other materials covering numerous topics.

10.1.4.3 Certain instructions, directives, and other information should be read by all work center members and may be routed by the AMO, division officers, or branch officers. The Required Reading and Maintenance Information Record (OPNAV 4790/34) is used to log each member's reading of applicable items. The required reading shall be maintained in a Required Reading File containing, at a minimum, maintenance information such as messages, notices, directives, instructions, or memos. A Required Reading Cross Reference Locator Sheet shall list the location of any item not available to an individual work center or too bulky to be included. For large publications and instructions, the Required Reading Cross Reference Locator Sheet shall be used to itemize specific chapters/sections/paragraphs related to the duties of the work center. The Work Center Supervisor shall review the Required Reading File monthly to ensure the material is current and all work center personnel are logging their progress. When the information is no longer required, it shall be purged from the file.

10.1.4.4 Naval aviation maintenance activities shall use available supplemental lesson guides or IMI to conduct maintenance training. Locally or Type Wing prepared supplemental lesson guides shall not duplicate IMI lesson guides. When IMI is not available, maintenance training lessons are prepared as directed by the MO. Instructors, usually detailed from the Maintenance Department, are responsible for presentations and reports of student progress. Instructors shall be identified per [paragraph 10.1.3.9a](#).

10.1.4.5 Supplemental lesson guides to support aircraft or equipment not covered by IMI shall be reviewed annually, or sooner if system/component changes/modifications have occurred, and prepared in the following format:

- a. Lecture number (assigned for identification).
- b. Time (duration of the lecture).
- c. Date prepared.
- d. Date reviewed.
- e. By (name and rank/rate).
- f. Title (subject of lecture).
- g. Objective (purpose of lecture).
- h. Instructional aids (materials to assist in presentation, such as visual aids or schematics). Indicate where materials can be found if not attached to the lecture.
- i. Instructor's references (material with which the instructor should be familiar before presenting the lecture).
- j. Presentation (narrative or outline so complete that a new or substitute instructor could conduct a satisfactory lecture). Safety related topics and QA functions shall be thoroughly discussed.
- k. Summary (key points which must include safety precautions and emergency procedures).
- l. Question and answer period (specific questions regarding key points, safety precautions, and emergency procedures discussed in the lecture).

10.1.4.6 Where IMI is used, the requirements for written lesson guides do not apply. The master IMI software will be maintained as part of the CTPL or will be downloaded from the remote IMI library.

10.1.4.7 Qualification/certification records provide a standardized, documentable individual record for Navy aviation maintenance personnel. Marine Corps personnel shall use MATMEP. For all requirements throughout this instruction, ASM shall be considered an individual's qualification/certification record for those commands that have completed ASM implementation.

NOTES 1: Duplicate paper records and forms are not authorized in activities where ASM has been implemented.

2. In the event that a specific qualification/certification equivalency within ASM does not fulfill the requirements of this instruction, a trouble call shall be placed to the local Site Representative and paper records shall be used until the ASM deficiency is corrected.

3. Any document (Medical/Course Completion) received from an outside activity shall be scanned into the appropriate section within ASM.

10.1.4.7.1 The qualification/certification record shall be initiated for each enlisted member of the activity and shall accompany the member upon transfer. For members transferring to an activity where ASM has not been implemented, a paper record (in a standard 9X12 folder) shall be initiated. The AMO shall certify that the qualifications, certifications, and licenses requiring signatures have been documented using electronic signatures. The forms/formats listed below are mandatory, in the order indicated. The qualification/certification record will only contain documents required by individuals to perform their current duties. All other documents will be returned to the individuals. The qualification/certification record will not contain reproduced Enlisted Service Record pages.

10.1.4.7.2 The Qualification/Certification Record (Left Side) (Figure 10.1-6) contains all current letters/certificates of designation.

10.1.4.7.2.1 Current Quality Assurance Representative/Inspector Recommendation/Designation (OPNAV 4790/12) and all current designation letters/certifications/qualifications.

10.1.4.7.2.2 Required current medical certifications, for example, audiograms, X ray Screening, Laser Eye Testing, Flight Deck Physical, and CPR.

10.1.4.7.2.3 Course completion certificates, for example, FASOTRAGRU/CENNAVNTECHTRAU completion letters/certificates, including SE Phase I and Phase II training.

10.1.4.7.2.4 PQS completion certificates, for example, NAVPERS 1070/604 for shipboard damage control and 3M.

10.1.4.7.3 The Qualification/Certification Record (Right Side) (Figure 10.1-7) contains billet descriptions/assignments and maintenance training history.

10.1.4.7.3.1 Billet descriptions/assignments as required by this chapter and Chapter 6.

10.1.4.7.3.2 NAMP Indoctrination Training (Figure 10.1-5).

10.1.4.7.3.3 Maintenance Training Syllabus.

10.1.4.7.3.4 NAVOSH (for current and past 4 years)/Safety Training (Figure 10.1-2).

10.1.4.7.3.5 Egress/Explosive System Checkout Certification (if applicable).

10.1.4.8 ASM Procedures

10.1.4.8.1 Implementation

10.1.4.8.1.1 During the ASM implementation process, the entire content of each individual's training jacket will be scanned to provide a historical archive to support proof of qualification/certification for pre-requisite and QA purposes. The electronic version of the scanned training jacket will be provided via CD to the command. These CDs shall be retained by the Maintenance Training Program Manager/Fleet Administrator. Naval Undersea Warfare Center Keyport will also archive these files as a failsafe.

10.1.4.8.1.2 Procedures for completing qualification/certification within areas not 100 percent complete at the time of ASM implementation, is at the discretion of the command.

10.1.4.8.1.3 Stand-up training is provided to each command as ASM is implemented and in-process training must continue to ensure adequate knowledge of the software system itself is maintained as personnel transfer.

10.1.4.8.2 Qualification/Certification

10.1.4.8.2.1 Approved qualifiers shall sign all tasks (line items) for individuals who successfully demonstrate thorough knowledge and practical application capabilities for the perspective qualification/certification.

10.1.4.8.2.2 Work center supervisors will forward final qualification/certification recommendations to the chain of command.

10.1.4.8.2.3 OJT may be documented using NALCOMIS/OMA download. The NALCOMIS/OMA System Administrator shall be responsible for building the ADHOC Query and providing the Fleet Administrator the data for download into ASM on a weekly basis.

10.1.4.8.3 Transfer Scenarios

10.1.4.8.3.1 ASM Command to ASM Command. Individual training jackets will be electronically exported from the current command database to the receiving command database.

10.1.4.8.3.2 ASM Command to Non-ASM Command. The ASM command shall transfer the electronic version onto a CD in .pdf format. The Division Officer shall provide a signed memorandum certifying the CD to be accurate.

10.1.4.8.3.3 Non-ASM Command to ASM Command. The entire training jacket shall be scanned and placed on a CD and individual qualification/certifications will be entered into ASM.

OJT SYLLABUS: 9101

TA-75 TOW TRACTORS

NAME: _____

[illegible]

Figure 10.1-1: OJT Syllabus (Sample)

NAVOSH/SAFETY TRAINING

NAME: _____

RATE/RANK: _____

DATE ARRIVED: _____

TOPIC	INSTRUCTOR/DATE	INSTRUCTOR/DATE	INSTRUCTOR/DATE
NAVOSH Program (Annually)			
NAVOSH: Identification of key personnel and chain of command. (Annually)			
NAVOSH: Mishap Reporting (Annually)			
HAZARD Identification (Annually)			
Safety Precautions and Standards (Annually)			
First Aid and Survival Training (Annually)			
Mishap Prevention (Annually)			
Back Injury Prevention (Annually)			
Hearing Conservation (Annually, if applicable)			
Sight Conservation (Annually)			
First Aid (Quarterly, if applicable)			
Fire Prevention/Equipment (Annually)			
Radio Frequency Radiation (Annually)			
Laser (Annually)			
Battery Safety (Quarterly)			
Cardiopulmonary Resuscitation (CPR) (If applicable)			
Asbestos Hazards (Annually, if applicable)			
Lead (Annually, if applicable)			
Man-Made Mineral Fiber (Annually, if applicable)			
Confined Space Entry (Annually, if applicable)			
Hazard Communication (Annually)			
Hazard Communication OJT (MSDS) (Annually)			

NOTE: This figure is not all inclusive. Refer to applicable instructions for additional requirements.

Figure 10.1-2: NAVOSH/Safety Training

<u>Topic</u>	<u>COMNAVAIRFOR- INST 4790.2</u>	<u>Remarks</u>
Fuel Surveillance Program	Paragraph 10.2	Indoc. all personnel (as required). (O-level)
Navy Oil Analysis Program	Paragraph 10.3	Indoc. all personnel for commands maintaining the program.
Aviators Breathing Oxygen Surveillance Program	Paragraph 10.4	Indoc. all personnel (as required).
Hydraulic Contamination Control Program	Paragraph 10.5	Indoc. all personnel and follow-on (as required).
Tire and Wheel Maintenance Safety Program	Paragraph 10.6	Indoc. all personnel and follow-on (as required).
Quality Assurance Audit Program	Paragraph 10.7	Indoc. all personnel and follow-on (as required).
Oil Consumption Program	Paragraph 10.8	Indoc. all personnel and follow-on (as required). (O-level)
Naval Aviation Maintenance Discrepancy Reporting Program	Paragraph 10.9	Indoc. all personnel and follow-on (as required).
Technical Directive Compliance Program	Paragraph 10.10	Indoc. all personnel and follow-on (as required). Special emphasis for supervisors, Maintenance/Production Control (including Logs and Records) and Material Control personnel and QARs/CDQARs/CDIs.
Foreign Object Damage Prevention Program	Paragraph 10.11	Indoc. all personnel and follow-on (as required).
Tool Control Program	Paragraph 10.12	Indoc. all personnel and follow-on (as required).
Corrosion Prevention and Control Program	Paragraph 10.13	Indoc. all personnel and follow-on (as required).
Plane Captain Qualification Program	Paragraph 10.14	Indoc. all personnel and follow-on (as required). (O-level)
Egress/Explosive System Checkout Program	Paragraph 10.15	Indoc. all personnel and every 6 months thereafter. (O-level)
Support Equipment Operator Training and Licensing Program	Paragraph 10.16	Indoc. all personnel and follow-on (as required).
Support Equipment Planned Maintenance System Program	Paragraph 10.17	Indoc. all personnel and follow-on (as required).

Figure 10.1-3: NAMP Training Requirements

<u>Topic</u>	<u>COMNAVAIRFOR- INST 4790.2</u>	<u>Remarks</u>
Naval Aviation Metrology and Calibration Program	Paragraph 10.18	Indoc. all personnel and follow-on (as required).
Hazardous Material Control and Management Program	Paragraph 10.19	Indoc. all personnel and follow-on (as required).
Individual Component Repair Program	Paragraph 10.20	Indoc. all personnel and follow-on (as required). (I-level)
Electromagnetic Interference/ Electrostatic Discharge Program	Paragraph 10.21	Indoc. all personnel and follow-on (as required).
Miniature/Microminiature Program	Paragraph 10.22	Indoc. all personnel and follow-on (as required). (I-level)
Aircraft Confined Space Program	Paragraph 3.2	Indoc. all personnel and follow-on (as required). (O-level)
Support Equipment Misuse and Abuse	Paragraph 3.2	Indoc. all personnel and follow-on (as required).
Emergency Reclamation	Paragraph 3.2 Paragraph 10.13	Indoc. all personnel and follow-on (as required). Quarterly for Emergency Reclamation Team members.
Nondestructive Inspection Program	Paragraph 3.2	Indoc. all personnel and follow-on (as required)
Maintenance Department Safety Program	Chapter 7	Indoc. all personnel and follow-on (as required)

NOTE: The requirements listed in Figures 10.1-1 and 10.1-2 are not intended to affect the following personnel/naval aviation maintenance programs which require specific training before an individual receives a certification/designation/license:

1. Hydraulic Contamination Patch Test Technician
2. Tire and Wheel Technician
3. QAR/CDQAR/CDI
4. EA
5. Plane Captain
6. SE Operator
7. 2M Technician
8. NDI Technician
9. Aeronautical Welder
10. Explosive Handler
11. Vibration Analysis Technician
12. Test Cell Operator
13. Battery Maintenance Technician
14. Respirator User
15. Oil Analysis Technician
15. Taxi/Turn-up
16. Corrosion Control Format Training Requirements

Figure 10.1-4: NAMP Training Requirements (continued)

NAMP INDOCTRINATION TRAINING

NAME: _____

RATE/RANK: _____

DATE ARRIVED: _____

TOPIC	INSTRUCTOR	DATE COMPLETED
Fuel Surveillance Program		
Navy Oil Analysis Program		
Aviators Breathing Oxygen Surveillance Program		
Hydraulic Contamination Control Program		
Tire and Wheel Maintenance Safety Program		
Quality Assurance Audit Program		
Oil Consumption Program		
Naval Aviation Maintenance Discrepancy Reporting Program		
Technical Directive Compliance Program		
Foreign Object Damage Prevention Program		
Tool Control Program		
Corrosion Prevention and Control Program		
Plane Captain Qualification Program		
Egress/Explosive System Checkout Program		
Support Equipment Operator Training and Licensing Program		
Support Equipment Planned Maintenance System Program		
Naval Aviation Metrology and Calibration Program		
Hazardous Material Control and Management Program		
Individual Component Repair List Program		
Electromagnetic Interference/Electrostatic Discharge Program		
Miniature/Microminiature Program		
Aircraft Confined Space Program		
Support Equipment Misuse and Abuse		
Emergency Reclamation		
Nondestructive Inspection Program		
Maintenance Department Safety Program		

Figure 10.1-5: NAMP Indoctrination Training

QUALIFICATION/CERTIFICATION RECORD

LEFT SIDE

Name: _____

Rate/Rank: _____

SSN: _____

1. Current Letters/Certificates of Designation/Qualifications, for example, OPNAV 4790/12.
2. Medical certifications, for example, audiograms, X ray, screening, Laser eye testing, flight desk physical, and CPR.
3. Course completion certificates, for example, FASO and CENNAVNTECHTRA; including SE Phase I and Phase II training.
4. Personal Qualifications Standards (PQS).

PRIVACY ACT STATEMENT

1. Authority for the collection of information: 5 U.S.C. 301, Department Regulation and E.O. 9397 (SSN).
2. Information contained in your qualification/certification record will be used primarily to monitor your training progress and status, and for miscellaneous administrative functions within the Training Department.
3. Completion of this form is voluntary. However, failure to complete the form may result in inaccurate documentation of your training. The principal purpose of the Privacy Act is to enable you to make known your special considerations and authorization for the release of qualifications/certification record information.

I understand that this privacy statement applies to all requests for personal information made to my qualification/certification record and that a signed copy in my qualification/certification record is evidence of this notification. I further understand that I may receive a copy of this statement from the Training Department upon request, and will be informed of changes to the system or records for which this information is compiled and I have the right to review personal data contained in this record.

Signature

Date

Figure 10.1-6: Qualification/Certification Record (Left Side)

QUALIFICATION/CERTIFICATION RECORD

RIGHT SIDE

1. Billet/Collateral Duty Descriptions
2. NAMP Indoctrination Training
3. Maintenance Training Syllabus
4. NAVOSH/Safety Training
5. Egress/Explosive System Check-Out Certification (if applicable)

Division Officer Quarterly Review for

Rate/Rank

Name (Last, First, MI)

Date	Initials	Printed Name	Date	Initials	Printed Name
Initial Check In					

Figure 10.1-7: Qualification/Certification Record (Right Side)

10.2 Fuel Surveillance Program (NAMPSOP)

10.2.1 Introduction

10.2.1.1 The Fuel Surveillance Program establishes policy, responsibilities, and requirements for implementing procedures to maintain a satisfactory level of aircraft and engine fuel systems purity.

10.2.1.2 References:

- a. NAVAIR 01-1A-35, Aircraft Fuel Cells and Tanks.
- b. NAVAIR 00-80T-109, Aircraft Refueling NATOPS Manual.
- c. MIL-HDBK-844 (AS), Aircraft Refueling Handbook.
- d. NAVAIR 15-01-500, Preservation of Naval Aircraft.

10.2.2 Discussion

10.2.2.1 The Fuel Surveillance Program applies to all Navy and Marine Corps aircraft, engines, and test cells. Proper fuel surveillance prevents the harmful effects of fuel contamination which include erratic or incorrect fuel quantity indications, fuel system icing, and damage to engines and fuel system components.

10.2.2.2 The LMTC responsible for the Fuel Surveillance Program is COMMANDER, ATTN AIR-4.4.5, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, BLDG 2360, 22229 ELMER RD UNIT 4, PATUXENT RIVER MD 20670-1534, DSN 757-3421 or COMM (301) 757-3421.

10.2.2.3 Condensation of moist air can introduce small amounts of free water in empty or partially filled fuel cells/tanks. Microbiological organisms can grow if free water is present. Also, particulate matter contamination may be generated within fuel cells/tanks and lines or be introduced during maintenance. As a precaution against fuel contamination, aircraft maintenance personnel and test cell operators must inspect for water and foreign matter in fuel cells/tanks on a scheduled basis.

10.2.2.4 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.2.3 Responsibilities; O-Level and I-Level Commander, Fleet Readiness Center (COMFRC) Activities

10.2.3.1 COs may authorize pilots-in-command to conduct applicable T/M/S NATOPS pilot inspections, ensuring servicing requirements are accomplished, and sign the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) in the certification block. Accomplishing these requirements, rather than completing all daily, turnaround, and fuel sampling requirements, is sufficient for safe for flight certification while operating away from home without qualified maintenance personnel for periods not exceeding 72 hours.

10.2.3.2 The MO shall:

- a. Designate, in writing via the MMP, a Fuel Surveillance Program Manager. The Line/Power Line Division Officer or Chief Petty Officer/NCOIC is recommended for O-level activities. The Power Plants or SE Division Officer or Chief Petty Officer/NCOIC is recommended for I-level activities. The Production Officer shall designate in writing a Fuel Surveillance Program Manager for FRC.

b. Coordinate with the NATOPS Officer to ensure all aircrew are thoroughly trained in fuel sampling requirements and procedures while operating away from home base.

c. Develop local command procedures (as required) per [Appendix D](#). The Production Officer shall develop local command procedures (as required) per Appendix D for FRCs.

10.2.3.3 The Program Manager shall:

NOTE: **A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.**

a. Ensure all command personnel associated with servicing aircraft fuel systems, are knowledgeable of NAVAIR 01-1A-35, NAVAIR 00-80T-109, MIL-HDBK-844(AS), applicable MIMs, MRCs, NATOPS procedures for their assigned aircraft or test cell, and this instruction.

b. Provide indoctrination and follow-on training to personnel relating to their responsibilities regarding the Fuel Surveillance Program. Coordinate with the AMO to develop training oriented to the type of aircraft/test cells operated. The syllabus shall include:

(1) Specific procedures and requirements for fuel sampling as outlined in NAVAIR 01-1A-35, NAVAIR 00-80T-109, MIL-HDBK-844(AS), T/M/S MIMs, MRCs, and NATOPS manuals, or test cell MIMs/MRCs.

(2) Procedures for maintaining fuel system integrity during maintenance.

(3) PPE, safety precautions, and HAZMAT procedures for fuel handling.

c. Maintain a program file to include:

(1) A list of all assigned equipment requiring fuel sampling.

(2) Applicable POCs.

(3) Program related correspondence and message traffic.

(4) Applicable references or cross reference locator sheets.

d. Review CSEC audits and reports to aid in assessing the Fuel Surveillance Program.

10.2.3.4 The QA Officer shall designate, in writing via the MMP, a QAR (normally, a Power Plants QAR) as the Fuel Surveillance Program Monitor. This assignment does not preclude other QARs from monitoring this program but places the overall responsibility with one individual.

10.2.3.5 The Program Monitor shall:

a. Perform audits using CSEC per [paragraph 10.7](#).

b. Notify Maintenance Control/Production Control whenever fuel contamination is suspected. QA shall conduct an immediate investigation of aircraft/test cell fuel systems to determine source of contamination. If the source is not limited to a particular aircraft/test cell, the refueling source shall be determined and the station/ship Fuels Officer/Supervisor immediately notified and provided a sample for analysis per MIL-HDBK-844(AS).

c. Assist in preparing **R} DRs**.

10.2.3.6 Maintenance Control/Production Control shall:

- a. Notify QA and issue a downing discrepancy against the aircraft or test cell until the fuel system is determined to be free of contamination.
- b. When embarked, ensure fuel samples are drawn and analyzed for flash point and the precautions of NAVAIR 00-80T-109 are followed whenever an aircraft or test cell receives, or is suspected of receiving, any fuel other than JP-5. Notify flight deck control not to move the aircraft to the hangar bay until the flashpoint has been certified to be above 120 degrees Fahrenheit.
- c. Debrief aircrew returning from cross-country flights to verify specific fuels used.
- d. Ensure fuel systems of preserved aircraft and test cells are monitored per T/M/S MIMs/MRCs or NAVAIR 15-01-500.
- e. Ensure a QAR inspects fuel cells/tanks for FOD and contaminants immediately prior to closing (after maintenance has been performed).
- f. Ensure adherence to limitations regarding interchangeability of various grades and types of fuel. Approved (primary and alternate) and emergency fuels are listed in applicable NATOPS or flight handbooks.

10.2.3.7 The Line/Power Line (Plane Captain Branch) Supervisor and Test Cell Supervisor shall:

- a. Ensure Fuel Surveillance Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record.
- b. Ensure only properly trained personnel perform fuel sampling.
- c. Ensure personnel adhere to all procedures and safety precautions.

NOTE: If relatively large quantities of water or particulate matter are present (compared to a normal sample) or small amounts persist in two samples or from other low point drains, notify Maintenance Control/Production Control immediately.

- d. Retain contaminated samples for inspection by a QAR or Power Plants CDQAR.
- e. Initiate a downing discrepancy when abnormal amounts of water or contaminants are present during sampling.
- f. Ensure adequate supplies of authorized sampling equipment and PPE are on hand.

10.2.3.8 The Power Plants and Test Cell Supervisor shall:

- a. Ensure integrity of fuel systems during routine maintenance, including covers/caps on open or removed fuel cells, lines, and components.
- b. If contamination is present, assist QA in conducting an immediate investigation of the aircraft/test cell fuel system and components to determine the source of contamination.

NOTE: If the source of contamination is not isolated to a particular fuel cell/tank, the refueling source shall be determined and the cognizant activity Fuels Officer/Supervisor notified.

- c. Refer to the MIMs and T/M/S NATOPS for possible specific gravity and minimum flow setting adjustment if aircraft/test cells have been serviced with fuels other than JP-5.

d. Ensure non-RFI and inactive fuel cells/tanks are properly preserved and protected against contamination.

10.2.3.9 Aircrew shall:

a. Accomplish fuel sampling per NAVAIR 01-1A-35, MIMs, MRCs, or applicable Air Force, Army, or FAA approved equivalents when away from home.

b. Be thoroughly familiar with fuel sampling requirements/procedures and contamination identification prior to any flight which may require refueling/fuel sampling without maintenance personnel available. Aircrew, prior to commencing helicopter in-flight refueling operations, must be trained to perform inspection of fuel samples per NAVAIR 00-80T-109.

c. Be thoroughly familiar with approved emergency fuels and limitations regarding interchangeability of fuel types and grades.

d. Notify Maintenance Control when fuel other than JP-5 has been used or fuel specific gravity setting has been adjusted.

e. Ensure adherence to limitations on interchangeability of various grades and types of fuel. Approved (primary and alternate) and emergency fuels are listed in the applicable NATOPS or flight handbooks.

10.2.4 Aircraft Fuel Sampling Procedures

WARNING: JP-4, JP-5, AND JP-8 CAN CAUSE SEVERE BURNS, IRRITATIONS, AND BLINDNESS. AVOID PROLONGED SKIN CONTACT WITH ANY AVIATION FUEL.

10.2.4.1 Specific intervals for fuel samples are listed in the applicable aircraft MRCs. Unless otherwise specified in aircraft MRCs, fuel samples shall be taken within 24 hours preceding the aircraft's initial launch and shall not be valid for more than 24 hours.

10.2.4.2 Fuel sampling shall be conducted per the T/M/S MIMs/MRCs/GAI manuals. ISSCs/LMTC shall provide guidance for aircraft without specified fuel sampling procedures. Minimum procedures are outlined below:

a. Allow maximum possible time before sampling on aircraft moved or refueled to allow for water and solids to settle. Whenever operating conditions permit, aircraft should have a minimum of two hours settling time.

b. Wear PPE, including chemical-resistant gloves and goggles, while taking, handling, and disposing of fuel samples.

c. Take fuel samples from all fuel cell/tank low point drains, including auxiliary, removable, and in-flight refueling tanks (approximately one pint from each low point drain).

d. A qualified aircrew, shift supervisor, CDI, CDQAR, or QAR shall visually inspect all fuel samples for a clear and bright appearance per NAVAIR 00-80T-109 by swirling and checking directly under the swirl vortex for any discoloration, water, cloudiness, or sediment. If contaminants are present, retain sample, drain approximately 1 gallon of fuel into bucket or other suitable container, and take another sample. If the second sample is contaminated, immediately notify Maintenance Control and give both samples to QA for inspection.

e. Initiate a downing discrepancy if a satisfactory sample is not achieved after the second sample.

- f. Empty and clean sample bottles after each use.
- g. Dispose of fuel per local HAZMAT procedures.

10.2.5 Test Cell Fuel Sampling Procedures

WARNING: JP-4, JP-5, JP-8 CAN CAUSE SEVERE BURNS, IRRITATIONS, AND BLINDNESS. AVOID PROLONGED SKIN CONTACT WITH ANY AVIATION FUEL.

10.2.5.1 Take fuel samples from all fixed and portable engine test stands fuel cells/tanks and accumulators.

10.2.5.2 Take fuel samples prior to first engine run of the day, or weekly as a minimum.

10.2.5.3 Wear PPE, including chemical-resistant gloves and goggles, while taking, handling, and disposing of fuel samples.

10.2.5.4 Drain/draw samples from lowest possible point below the fuel pickup point.

NOTE: A} For underground fuel tanks, several fuel sampling methods from various locations are acceptable. The preferred method is an in-line sample between the pump and filter separator during flow (T.O. 42B-1-1).

10.2.5.5 Draw approximately one pint of fuel for each sample using a one-quart, clear, clean glass or polyethylene container.

10.2.5.6 Inspect samples for contamination by swirling and checking directly under the swirl vortex for any discoloration, water, cloudiness, or sediment. If contaminants are present, retain the sample, drain/draw approximately 5 gallons (but not more than 10 gallons) of fuel from the low point and take another sample. If more than 10 gallons are drained to achieve a satisfactory sample, the fuel tank shall be defueled and cleaned. Notify Production Control and QA immediately.

10.2.5.7 A qualified shift supervisor, CDI, CDQAR, or QAR shall visually inspect all fuel samples for a clear and bright appearance with no visible water/sediment per NAVAIR 00-80T-109. Initiate a downing discrepancy if a satisfactory sample is not achieved after the second sample.

10.2.5.8 Empty and clean sample bottles after each use.

10.2.5.9 Dispose of fuel per local HAZMAT procedures.

10.3 Navy Oil Analysis Program (NOAP) (NAMPSOP)

10.3.1 Introduction

10.3.1.1 The NOAP establishes policy, responsibilities, and requirements for monitoring equipment condition in an effort to detect impending failures without equipment removal or extensive disassembly.

10.3.1.2 References:

- a. OPNAVINST 4731.1, Joint Oil Analysis Program (JOAP).
- b. NAVAIR 17-15-50.1, Joint Oil Analysis Program Manual, Volume I.
- c. NAVAIR 17-15-50.2, Joint Oil Analysis Program Manual, Volume II.
- d. NAVAIR 17-15-50.3, Joint Oil Analysis Program Manual, Volume III.
- e. NAVAIRINST 4731.1, Navy Oil Analysis Program for Aeronautical Equipment.

10.3.2 Discussion

10.3.2.1 The NOAP provides Navy and Marine Corps aviation activities the guidance necessary to achieve required performance, efficiency, and logistic support by establishing policy for integrated oil analysis requirements. The Navy participates in the JOAP, a combined Navy, Army, and Air Force effort designed to ensure timely and accurate oil analysis support by strategically locating oil analysis laboratories and standardizing procedures and equipment. All aspects of oil servicing, documentation, and trend analysis are critical to flight.

10.3.2.2 The ISSC is the NOAP MANAGEMENT OFFICE, CODE 4.4.6.1, 296 FARRAR RD, PENSACOLA FL 32508-5021, DSN 922-4603 or COMM (850) 452-4603.

10.3.2.3 The JOAP TECHNICAL SUPPORT CENTER, 85 MILLINGTON AVE, PENSACOLA FL 32508-5010, DSN 922-5627 or COMM (850) 452-5627 EXT 101, can provide information regarding correlation, testing standards, and equipment.

10.3.2.4 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.3.3 Responsibilities

10.3.3.1 O-level and I-level activities

10.3.3.1.1 The MO/FRC Equivalent Officer shall:

- a. Designate, in writing via the MMP/SME listing, the MMCO (O-level) or the Power Plants Division Officer/QA Specialist (I-level/FRC) as the NOAP Manager.
- b. Develop local command procedures (as required) per [Appendix D](#).

10.3.3.2 FRC activities shall:

- a. Develop local command procedures for the Navy Oil Analysis Program (as required) per [Appendix E](#) of this instruction.

b. Ensure all personnel associated with servicing engines and gearboxes are knowledgeable of and comply with all requirements and procedures outlined in references in [paragraph 10.3.1.2](#), applicable MIMs, MRCs, and this instruction.

c. Ensure indoctrination and follow-on training is provided to personnel relating to their NOAP responsibilities and documented.

d. Ensure samples are taken from engines/gearboxes/accessories at the intervals established in appropriate MRCs and MIMs, documented, and delivered to the assigned monitoring laboratory per NAVAIR 17-15-50.1 and NAVAIRINST 4731.1.

e. Ensure an appropriate logbook or AESR miscellaneous/history entry is made whenever oil analysis results indicate abnormal or out of limits wear metal or other oil contamination. Such entry, to include type and amount of wear metal or other contaminant, corrective action taken and results of subsequent sample analysis. For AESR and SRC card items this entry will be made in the repair/rework/overhaul section of the applicable record. For EHR card items this entry will be made in the maintenance record section of the applicable record.

f. Review NOAP audit data to aid in identifying specific areas of concern and to determine steps required for program/process improvement.

g. Ensure quantity of oil added to each engine is annotated in block 6 of the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) per this instruction. Block 8 may be used to document gearbox oil, hydraulic fluid quantity, or other aircraft servicing information.

h. Ensure personnel assigned duties of servicing engines and gearboxes are trained on proper servicing techniques and documentation requirements.

i. Keep a record of all NOAP/JOAP laboratory results and trends for as long as the equipment is held by the command. NAVAIR 17-15-50.1 provides an example.

j. Review all NOAP/JOAP laboratory advisories and initiate action as applicable on sample results with codes other than A per NAVAIR 17-15-50.1.

k. Transfer all NOAP records with aircraft/engine/equipment logbooks.

l. Ensure NOAP indoctrination, follow-on training, and lubrication systems training (to include proper servicing and documentation procedures) are provided to personnel. Training shall include personnel responsibilities and shall be documented.

m. Ensure oil servicing units are maintained free of contamination.

n. Conduct oil sampling/servicing per applicable MIMs/MRCs.

o. Ensure NOAP/JOAP Laboratory Operators meet qualification and training requirements per NAVAIR 17-15-50.1.

p. Process and return all sample results via the fastest possible means. For samples with abnormal results, advise the customer activity of the laboratory recommendation no later than 24 hours after sample receipt per NAVAIR 17-15-50.2.

q. Forward sample results coded other than recommendation A to the appropriate aircraft/engine/equipment ISSC.

r. Perform preoperational and periodic maintenance/inspections on analysis equipment per applicable MIMs/MRCs.

10.3.3.3 The Program Manager shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Be knowledgeable of OPNAVINST 4731.1, NAVAIR 17-15-50.1, NAVAIR 17-15-50.2, NAVAIR 17-15-50.3, NAVAIRINST 4731.1, applicable MIMs, MRCs, and this instruction.

b. Provide indoctrination and follow-on training to personnel relating to their NOAP responsibilities.

c. Maintain a program file to include:

(1) Applicable POCs.

(2) List of all the activity's assigned equipment requiring oil analysis. For example, the I-level list will include AIMD and Engineering Department equipment.

(3) Program related correspondence and message traffic.

(4) Applicable references or cross reference locator sheets.

d. Ensure Oil Analysis Requests (DD 2026) (Figures 10.3-1 and 10.3-2) are reviewed for accuracy and expeditiously forwarded with oil samples to the oil laboratory. Detailed explanations for use and completion criteria are in NAVAIR 17-15-50.1.

e. Request a "special" oil analysis from the NOAP/JOAP laboratory per NAVAIR 17-15-50.1. Mark the Oil Analysis Request (DD 2026) and mailing container with red borders to alert the oil laboratory of the need for immediate processing.

f. Provide feedback to the supporting NOAP/JOAP laboratory, via QA, on any discrepancies found or other actions taken as a result of oil laboratory recommendations. Examples of reporting feedback appear in NAVAIR 17-15-50.1.

g. Ensure an appropriate logbook or AESR Miscellaneous/History (OPNAV 4790/25A) entry is made whenever oil analysis results indicate abnormal or out of limits wear, metal, or other oil contamination.

h. Ensure aircraft on extended cross country flights have the last three oil sample results annotated on reverse side of Oil Analysis Request (DD 2026) in case of potential sampling requirements at a transient station oil laboratory.

i. Use CSEC information and reports (provided by the Program Monitor) to aid in identifying specific areas of concern and to determine steps required for program/process improvement.

j. Ensure adequate supplies of oil sampling kits are available. Information on sampling material appears in NAVAIR 17-15-50.1.

k. Ensure quantity of oil added to each engine is annotated in block 6 of the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) per this instruction. Block 8 may be used to document gearbox oil, hydraulic fluid quantity, or other aircraft servicing information.

l. Ensure personnel assigned duties of servicing engines and gearboxes are trained on proper servicing techniques and documentation requirements.

10.3.3.4 The QA Officer shall designate, in writing via the MMP/SME listing, a QAR/QA Specialist as the NOAP Monitor. This assignment does not preclude other QARs from monitoring this program but places the overall responsibility with one individual.

10.3.3.5 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Assist in preparing R} JDRS deficiency reports.
- c. Keep a record of all NOAP/JOAP laboratory results and trends for as long as the engine/equipment is held by the command. NAVAIR 17-15-50.1 provides an example.
- d. Review all NOAP/JOAP laboratory advisories and initiate a MAF/WO on sample results with codes other than A as listed in NAVAIR 17-15-50.1.

10.3.3.6 The Logs and Records Supervisor shall:

- a. Make appropriate logbook or AESR Miscellaneous/History (OPNAV 4790/25A), Scheduled Removal Component Card (OPNAV 4790/28A), and Equipment History Record Card (OPNAV 4790/113) entries when NOAP analysis results indicate abnormal wear limits, amounts of metal, or other contamination. Entries shall include type and amount of wear, metal or other contaminant, corrective action taken, and results of subsequent sample analysis. They will be made in the Repair/Rework/Overhaul section of Scheduled Removal Component Card (OPNAV 4790/28A) and the Maintenance Record section of the Equipment History Record Card (OPNAV 4790/113).
- b. Transfer all NOAP records with aircraft/engine/equipment logbooks.

10.3.3.7 The Work Center Supervisor shall:

- a. Ensure NOAP indoctrination, follow-on training, and lubrication systems training (to include proper servicing and documentation procedures) is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.
- b. Coordinate with the NOAP Manager to ensure an adequate supply of oil sampling kits.
- c. Ensure oil servicing units are maintained free of contamination.
- d. Conduct oil sampling/servicing per applicable MIMs/MRCs.

10.3.3.8 The NOAP/JOAP Laboratory Operator shall:

- a. Meet qualification and training requirements per NAVAIR 17-15-50.1.
- b. Process and return all sample results via the fastest possible means. For samples with abnormal results, advise the Maintenance/Production Control Supervisor of the customer activity of the laboratory recommendation no later than 24 hours after sample receipt per NAVAIR 17-15-50.2.
- c. Maintain a log of all phone calls, message traffic/personal contact regarding recommendations on equipment with abnormal results per NAVAIR 17-15-50.1.
- d. Forward sample results coded other than recommendation A to the appropriate aircraft/engine/equipment ISSC.

- e. Maintain and use publications required per NAVAIR 17-15-50.2.
- f. Perform preoperational and periodic maintenance/inspections on analysis equipment per applicable MIMs/MRCs.
- g. Ensure adequate quantities of test standards are available and within shelf-life limits per NAVAIR 17-15-50.1.
- h. Ensure results from paired correlation samples mailed from the JOAP Technical Support Center are submitted no later than the 21st of each month per NAVAIR 17-15-50.1.
- i. Ensure the Oil Analysis Request (DD 2026) form is accurate and complete. Provide feedback for improperly completed forms to the submitting unit's QA for corrective action.
- j. For coolanol/polyalphaolefin testing; maintain and use publications and equipment required to perform coolanol/polyalphaolefin testing per NAVAIR 17-15-50.2 and ensure coolanol/polyalphaolefin sample test data is entered in the computer and a copy is returned to the customer activity.

10.3.3.9 Aircrew shall be thoroughly familiar with oil servicing/sampling procedures.

OIL ANALYSIS REQUEST						
TO	OIL ANALYSIS LABORATORY					
FROM	MAJOR COMMAND					
	OPERATING ACTIVITY <i>(Include ZIP Code/APD/UID)</i>					
EQUIPMENT MODEL						
EQUIPMENT SERIAL NUMBER						
END ITEM MODEL/HULL NUMBER						
END ITEM SERIAL NUMBER						
DATE SAMPLE TAKEN <i>(Day, Mo., Yr.)</i>				LOCAL TIME SAMPLE TAKEN		
HOURS/MILES SINCE OVERHAUL						
HOURS/MILES SINCE OIL CHANGE						
REASON FOR SAMPLE <input type="checkbox"/> ROUTINE <input type="checkbox"/> LAB REQUEST <input type="checkbox"/> TEST CELL <input type="checkbox"/> OTHER <i>(Specify)</i>						
OIL ADDED SINCE LAST SAMPLE <i>(Oz., Pts., Qts., Gals)</i>						
ACTION TAKEN						
DISCREPANT ITEM						
HOW MALFUNCTIONED						
HOW FOUND <input type="checkbox"/> LAB REQUEST <input type="checkbox"/> AIR OR GROUND CREW						
HOW TAKEN		SAMPLE TEMPERATURE		TYPE OIL		
<input type="checkbox"/> DRAIN	<input type="checkbox"/> TUBE	<input type="checkbox"/> HOT	<input type="checkbox"/> COLD			
ENGINE POSITION: NAME: EMP NO:			REMARKS/MISC:			
			PHONE:			
			SIGNATURE:			
<i>FOR LABORATORY USE ONLY</i>						
SAMPLE RESPONSE TIME						
FE	AG	AL	CR	CU	MG	NA
NI	PB	SI	SN	TI	B	MO
ZN	LAB RECOMMENDATION					
SAMPLE NUMBER(S)				FILE MAINT	DATA SEQ	

DD FORM 2026, MAR 1999 (EG)

PREVIOUS EDITION MAY BE USED.
WHSDIOR, Mar 99

Figure 10.3-1: Oil Analysis Request (DD 2026) (Front)

TRANSIT AIRCRAFT OIL ANALYSIS RECORD																
ASSIGNED OIL ANALYSIS LABORATORY					LABORATORY TELEPHONE NO. (DSN) (Commercial)					END ITEM MODEL AND SERIAL NO. EQUIPMENT MODEL AND SERIAL NO.						
LAB CODE	DATE	TOTAL TIME SINCE		FE	AG	AL	CR	CU	MG	NI	PB	SI	SV	TI	MO	LAB REC
		OVERHAUL	OIL CHG													
DATE DEPARTED		(Return this form with aircraft)														
REMARKS																

DD FORM 2026 (BACK), MAR 1999

Figure 10.3-2: Oil Analysis Request (DD 2026) (Back)

10.4 Aviators Breathing Oxygen (ABO) Surveillance Program (NAMPSOP)

10.4.1 Introduction

10.4.1.1 The ABO Program establishes policy, responsibilities, and requirements for implementing and maintaining techniques to prevent contamination of aircraft oxygen systems and components through careful and safe handling, surveillance, and quality control.

10.4.1.2 References:

- a. NAVAIR 06-30-501, O₂/N₂ Oxygen/Nitrogen Cryogenics Systems.
- b. NAVAIR 13-1-6.4-1, Aviation Crew System Oxygen Equipment.
- c. NAVAIR A6-332AO-GYD-000, Aviators Breathing Oxygen (ABO) Surveillance Program Laboratory Manual and Field Guide.
- d. NAVAIR AG-115-SL-OMP-000, Cryogenics Sampler Model FCS 2001 Part Number 600646.
- e. NAVAIR 06-20-2, Gas Cylinders (Storage Type).
- f. MIL-STD-3007, Standard Practice for Unified Facilities Criteria and Unified Facilities Guide Specifications.
- g. NAVAIR 17-15-98, Aviators Breathing Oxygen Contaminant Analyzer, A/E24T-226 Part Number 8220A.
- h. NAVAIR 19-25D-26, Liquid Oxygen Servicing Trailer, Type TMU-70/M Part Number 22455.

10.4.2 Discussion

10.4.2.1 The ABO Surveillance Program involves the manufacture, use, handling, and servicing of oxygen and related SE. ABO must conform to stringent quality standards and be safely delivered through approved equipment. Poor quality oxygen presents a hazard to aircrew, maintenance personnel, and equipment.

10.4.2.2 The ISSC for the ABO Surveillance Program is COMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.8.6.10, HWY 547, LAKEHURST NJ 08733-5090, DSN 624-2963/2140 or COMM (732) 323-2963/2140.

10.4.2.3 Oxygen comes in two states, gaseous and liquid. LOX is converted to a gaseous state prior to delivery to the aircrew and requires frequent and continuous surveillance for the detection of contamination. Surveillance begins with the generation or procurement of LOX/gaseous oxygen and continues through storage, handling, transfer, and servicing of aircraft and oxygen systems. Continuous monitoring will ensure contaminants, for example, hydrocarbons, inert solids, particulate matter, moisture, carbon dioxide, toxic and odorous contaminants, nitrous oxide, and halogenated compounds, are immediately detected and eliminated.

10.4.2.4 Safety regulations must be conscientiously practiced and rigidly enforced. NAVAIR 06-30-501, NAVAIR 13-1-6.4-1, NAVAIR A6-332AO-GYD-000, NAVAIR 19-25D-26, and NAVAIR AG-115-SL-OMP-000 outline hazards and established safety procedures for oxygen systems. Knowledge of appropriate safety equipment and correct maintenance handling, servicing, sampling, and storage procedures are essential. A thorough understanding of potential hazards will prevent mishaps.

WARNING: SEVERE COLD BURNS MAY BE CAUSED WHEN THE HUMAN BODY COMES IN CONTACT WITH SURFACES COOLED BY LOX. THE SEVERITY OF THE BURN DEPENDS UPON THE CONTACT AREA AND CONTACT TIME. FIRE, EXPLOSION, AND EQUIPMENT FAILURE ARE OTHER TYPICAL THREATS.

10.4.2.5 All LOX/gaseous oxygen operations shall be performed by two or more qualified persons, except for removal and replacement of aircraft LOX converters. Qualified is defined as properly trained and licensed to perform all tasks involving LOX/gaseous oxygen handling and servicing.

10.4.2.6 PPE use is essential to prevent personnel injury. NAVAIR 06-30-501 and NAVAIR 13-1-6.4-1 provide specific information and minimum requirements for PPE.

10.4.2.7 Marine Corps and designated overseas Navy oxygen and nitrogen generating plants shall be operated and maintained as Work Center 820. The plant equipment shall be considered SE and maintained as such.

10.4.2.8 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.4.3 Responsibilities

10.4.3.1 The MO/Production Officer shall:

- a. Designate, in writing via the MMP/SME listing, an ABO Surveillance Program Manager.
- b. Develop local command procedures (as required) per [Appendix D](#).

10.4.3.2 The Program Manager/Coordinator shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Be knowledgeable with NAVAIR 06-30-501, NAVAIR 13-1-6.4-1, NAVAIR A6-332AO-GYD-000, NAVAIR AG-115-SL-OMP-000, NAVAIR 06-20-2, MIL-STD-3007, NAVAIR 17-15-98, NAVAIR 19-25D-26, MIMs, MRCs, and this instruction.

b. Provide indoctrination and follow-on training to all personnel involved in the manufacture, use, handling, and servicing of oxygen and related SE. Include indoctrination on dangers of LOX/gaseous oxygen and related systems.

c. Ensure only qualified personnel perform oxygen related functions and only licensed personnel operate oxygen servicing SE.

d. Ensure required PPE is available for personnel handling, servicing, and sampling/performing maintenance on LOX systems and oxygen servicing SE.

e. Ensure a sufficient number of personnel are oxygen certified/qualified to meet command commitments.

f. Maintain a program file to include:

- (1) Applicable POCs.
- (2) Historical records/reports, for example, analyzer correlation results and Industrial Hygienist air exchange results.
- (3) Analyzer sample results (retain for one year).

(4) Program related correspondence and message traffic.

(5) Applicable references or cross reference locator sheets.

g. Review periodic records of spectrophotometer operating parameters to detect performance trends per NAVAIR 17-15-98.

h. Ensure all personnel dealing with oxygen are familiar with, and comply with, proper safety and operating procedures per NAVAIR 06-30-501, NAVAIR 13-1-6.4-1, NAVAIR A6-332AO-GYD-000, NAVAIR 19-25D-26, and NAVAIR AG-115-SL-OMP-000.

i. Ensure aircraft/SE oxygen systems are purged per applicable MRCs/MIMs, or other directives at intervals specified.

j. Ensure PM is performed on all oxygen servicing equipment to ensure quality standards are maintained.

k. Ensure Maintenance Control/Production Control/cognizant personnel of the supporting activity promptly act upon reports of contamination or odors in oxygen systems.

l. Ensure all On Board Oxygen Generating System components are handled with the same care as LOX/gaseous oxygen components to prevent contamination.

m. Use CSEC information and reports (provided by the Program Monitor) to aid in identifying specific areas of concern and to determine what steps are required for program/process improvement.

10.4.3.3 The QA Officer shall designate, in writing via the MMP/SME listing, a QAR (normally an AME, PR, or D-level equivalent QA specialist) as the ABO Surveillance Program Monitor. This assignment does not preclude other QARs/QA specialists from monitoring this program, but places the overall responsibility with one individual.

10.4.3.4 The Program Monitor shall:

a. Perform audits using CSEC per [paragraph 10.7](#).

NOTE: AIMD shall perform ABO audits on CVW LOX servicing operations when embarked and provide audit results to the CVW MO.

b. Assist in preparing R} DRs.

10.4.3.5 Maintenance Control/Production Control shall:

a. Ensure aircraft/SE oxygen systems are purged per MIMs/MRCs, or other pertinent directives, at prescribed intervals.

b. Schedule PM on all oxygen servicing SE to ensure quality standards are maintained.

c. Take prompt action when contamination or odors in oxygen systems are reported.

10.4.3.6 The Work Center Supervisor shall:

a. Ensure ABO Surveillance Program indoctrination and follow-on training is provided to required personnel to include those personnel involved in the manufacture, use, handling, and servicing of oxygen and related SE. All personnel associated with the ABO Surveillance Program shall have a thorough knowledge

of the characteristics of LOX/gaseous oxygen, hazards of contamination, and need for quality standards. They shall be familiar with and comply with procedures outlined in NAVAIR 06-30-501, NAVAIR 13-1-6.4-1, NAVAIR A6-332AO-GYD-000, NAVAIR AG-115-SL-OMP-000, NAVAIR 06-20-2, MIL-STD-3007, NAVAIR 17-15-98, NAVAIR 19-25D-26, MIMs, and MRCs (as applicable) to the oxygen servicing/maintenance tasks they perform. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) for O-level and IMAs and as appropriated by COMFRC activities in the individual's qualification/certification record.

- b. Maintain a sufficient number of oxygen certified/qualified personnel.
- c. Maintain LOX converters per NAVAIR 13-1-6.4-1 and oxygen servicing SE, supplies, and tools per applicable manuals.
- d. Organize oxygen shops per NAVAIR 13-1-6.4-1 or MIL-HDBK-1028/1C (if applicable).
- e. Ensure all tools/tool boxes used on oxygen systems and servicing SE are marked "OXYGEN USE ONLY".
- f. Provide proper PPE for work center personnel and ensure it is used. When involved in handling LOX, ensure all personnel present are wearing PPE.
- g. Require all personnel to follow safety precautions and regulations while performing maintenance on oxygen systems.
- h. Ensure a clean 6-inch deep drip/drain pan is used for LOX operations, is identified "LOX USE ONLY", and is free from dirt, grease, oil, fuel, hydraulic fluid, and other hydrocarbons.
- i. Notify Maintenance Control/Production Control if contamination or odors in oxygen systems are detected or suspected.
- j. Keep equipment and areas around oxygen system components clean and free of oil and petroleum products.
- k. All operations involving the handling of liquid or gaseous oxygen are performed by two or more ABO qualified persons during the removal and replacement of aircraft LOX converters.

10.4.3.7 ABO analyzing equipment operators shall be:

- a. Trained by one of the following:
 - (1) Aviators Breathing Oxygen (ABO) Test Site Operator/Analyst course (Course C-670-2018).
 - (2) Aircrew Survival Equipment man Class A1 course (Course C-602-2010).
 - (3) Aviators Breathing Oxygen Contaminant Analyzer Intermediate Operator Maintainer course (Course C-750-3217).
 - (4) ABO qualified NATEC (Code 6.6/6.7) personnel.

NOTE: For material engineering laboratories, acceptable training may be obtained via a senior chemist, equipment operator, or an accredited university.

- b. Actively involved with ABO analysis. Personnel who do not interpret sample scans within a two-year period shall be required to complete all initial certification requirements.

c. Knowledgeable with ABO sampling procedures and analyzing requirements of NAVAIR A6-332AO-GYD-000 and NAVAIR AG-115-SL-OMP-000.

10.5 Hydraulic Contamination Control Program (NAMPSOP)

10.5.1 Introduction

10.5.1.1 The Hydraulic Contamination Control Program establishes policy, responsibilities, and requirements for implementing and maintaining techniques to achieve and maintain a satisfactory level of fluid purity in hydraulic systems and provides for safe and efficient operation of naval aircraft, weapon systems, and SE.

10.5.1.2 References

- a. NAVAIR 01-1A-17, Aviation Hydraulics Manual.
- b. NAVAIR 01-1A-20, Aviation Hose and Tube Manual.
- c. NAVAIR 17-15-521, Operations and Intermediate Maintenance Instruction with IPB Particle Counting System Part Number 8011-3.
- d. NAVAIR 17-15BF-97, Operation Instructions Hydraulic Counter Type I, Type II.

10.5.2 Discussion

10.5.2.1 Direction provided here is applicable to all Navy and Marine Corps activities and personnel concerned with the operation, maintenance (including rework), design, development, production, training and other support of aircraft hydraulic systems, airborne hydraulic equipment, components, related SE and supporting facilities and installed equipment. The requirements of this instruction shall be adhered to by commercial activities and other government agencies performing contract maintenance, production, or other support functions on naval aircraft and related hydraulic equipment by specific inclusion in procurement or contractual documentation. Every artisan/technician performing maintenance on hydraulic systems must be aware of the causes and effects of hydraulic contamination and those practices and procedures required to prevent contamination. Supervisory personnel shall be informed and shall ensure acceptable standards are met.

10.5.2.2 Hydraulic fluid contamination causes hydraulic system and component failures and presents a serious threat to flight safety. Typical contaminants include metallic and nonmetallic debris (self-generated and externally introduced), water, or other foreign fluids, all of which serve to degrade hydraulic system performance and component life. A complete particulate categorization appears in NAVAIR 01-1A-17.

10.5.2.3 The LMTC responsible for the Hydraulic Contamination Program is COMMANDING OFFICER, IN-SERVICE SUPPORT CENTER A1CHERRY POINT, CODE 4.3.4.2, PSC BOX 8021, CHERRY POINT NC 28533-0021, DSN 451-9767 or COMM (252) 464-9767.

10.5.2.34 Stringent contamination control is required at all levels of maintenance to ensure flight safety and the highest degree of hydraulic system readiness. An aggressive hydraulic fluid surveillance program, with sampling/testing accomplished (as required), will ensure hydraulic fluids are maintained within acceptable contamination limits. Maximum acceptable hydraulic fluid particulate contamination levels are Navy Standard Class 5 for aircraft and Navy Standard Class 3 for SE.

10.5.2.5 An electronic particle counter is the preferred hydraulic fluid contamination analysis equipment and shall be used when available. The Hydraulic Fluid Contamination Analysis Kit, Part Number 57L414 (or authorized equivalent), may be used when a particle counter is not readily available at O-level or supporting I-level.

10.5.2.6 Purification is the process of removing air, water, solid particles, and chlorinated solvents from hydraulic fluids. Using a purifier to clean aircraft and SE will reduce fluid consumption and replace the need for flushing.

10.5.2.7 Decontamination procedures shall be used to restore affected systems to acceptable levels when equipment fails to meet required Navy standard cleanliness levels. Acceptable contamination levels, related maintenance doctrine, and detailed maintenance requirements in NAVAIR 01-1A-17 shall be strictly enforced.

10.5.2.8 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS for O-level, IMA/FRC maintenance shall be filed in the individual's qualification/certification record.

10.5.3 Responsibilities; O-Level, IMA/FRC Activities

10.5.3.1 The Wing/MALS D-level activities shall develop an open-book written examination for the Hydraulic Contamination Control Program for the specific T/M/S. Passing score is 80 percent. The Wing/MALS D-level activities shall review the test annually.

10.5.3.2 The MO/Production Officer shall:

- a. Designate, in writing via the MMP/SME listing, a hydraulic contamination control certified individual as Hydraulic Contamination Control Program Manager/Coordinator.
- b. Develop local command procedures for the Hydraulic Contamination Control Program (as required) per [Appendix D](#).
- c. Designate personnel authorized to perform hydraulic sampling and contamination analysis using [Figure 10.5-1](#) or applicable D-level designation form.

10.5.3.3 The Program Manager/Coordinator shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be thoroughly familiar with R} applicable requirements of the references in [paragraph 10.5.1.2](#), MIMS, MRCs, and this instruction.
- b. Ensure all personnel involved with servicing aircraft/SE hydraulic components and systems receive initial and follow on Hydraulic Contamination Control program training. Training shall include requirements and procedures in the references in [paragraph 10.5.1.2](#), applicable TMS MIMS/MRCs, and this instruction. Training shall be documented within the individual's Qualification/Certification Record.

NOTE: Personnel certified by a previous command shall perform required reading for the specific T/M/S, pass the written examination, and demonstrate practical proficiency. The written examination is not required for those personnel currently certified by a previous command with the same T/M/S aircraft. The individual's qualification/certification record shall be annotated as previously complied with. Previous certification records shall be retained in the qualification/certification record.

- c. D}_____.
- d. Provide indoctrination training to all personnel (including supervisors and QA personnel) prior to conducting aircraft or SE hydraulic component maintenance, or hydraulic SE operation. Provide follow-on training (as required).

e. Ensure all personnel authorized to conduct aircraft/SE hydraulic systems sampling and analysis are designated using the Hydraulic Contamination Control Designation ([Figure 10.5-1](#)) and have completed the Hydraulic Contamination Control Qualification/Certification Worksheet ([Figures 10.5-2](#) and [10.5-3](#)) A} for each analysis method, for example, HIAC PODS, HIAC P/N 8011-3, UCC CM20 and Hydraulic Patch Test Analysis Kit P/N 57L414. Each qualification shall consist of five OJT sessions and one practical monitored by a qualified QAR and shall be documented on a separate Hydraulic Contamination Control Qualification/Certification Worksheet ([Figure 10.5-3](#)).

f. Maintain a program file to include:

(1) Applicable POCs.

(2) A list of all assigned equipment A} and aircraft hydraulic components, for example, WRAs and FOM, requiring hydraulic sampling.

(3) Program related correspondence and message traffic.

(4) Applicable references or cross reference locator sheets.

g. Ensure an adequate number of personnel are certified in hydraulic contamination control.

h. A} Ensure additional analysis qualifications attained after initial qualification shall contain corresponding additional required reading items per [Figure 10.5-2](#), lines 6-13. A new Hydraulic Contamination Control Qualification/Certification Worksheet ([Figures 10.5-2](#) and [10.5-3](#)) shall be routed with the entire qualification package through the Department Head for signature.

10.5.3.4 The QA Officer shall designate, in writing via the MMP, a QAR as the Hydraulic Contamination Control Program Monitor. This assignment does not preclude other qualified QARs from monitoring this program, but places the overall responsibility with one individual.

10.5.3.5 The Program Monitor shall:

a. Be qualified to perform hydraulic sampling and analysis.

b. Perform audits using CSEC per [paragraph 10.7](#).

c. Verify aircraft and SE hydraulic systems filters are changed, and sampling and analysis conducted per NAVAIR 01-1A-17, MIMs/MRCs, and preoperational requirements.

d. Maintain a Hydraulic Contamination Control Trend Analysis Chart R} ([Figure 10.5-4](#)) for each assigned aircraft and SE requiring hydraulic sampling. Each currently completed aircraft and SE Hydraulic Contamination Control Trend Analysis Chart shall be retained until the next chart is completed. Organizations that subcustody SE shall maintain Hydraulic Contamination Control Analysis Charts while the SE is in their custody.

e. Administer an open-book written examination for the Hydraulic Contamination Control Program. Any QAR may administer the examination.

f. Observe sampling and analysis techniques periodically, as well as during work center audits. Check hydraulic work center spaces for cleanliness, safety precautions, SE upkeep and abuse, facility adequacy, use and availability of authorized materials, and compliance with applicable hydraulic maintenance technical data.

g. Verify the work center uses appropriate methods, per NAVAIR 01-1A-17, to prevent introduction of contamination into hydraulic systems opened for maintenance and components being returned to Supply or removed to FOM.

h. Verify only authorized fluid dispensing SE is used and such SE is maintained in a high standard of cleanliness. All servicing SE will be equipped with 3-micron (absolute) filtration.

i. Assist in preparing **R}** DRs.

10.5.3.6 Maintenance Control/Production Control shall:

a. Ensure hydraulic **R}** fluid is sampled and analyzed during acceptance of assigned aircraft and SE.

b. Ensure the Hydraulic Contamination Control Trend Analysis Chart (Figure 10.5-4) is included in the aircraft logbook Miscellaneous/History (OPNAV 4790/25A) and SE Custody and Maintenance History Record (OPNAV 4790/51) upon transfer of aircraft and SE (if applicable).

c. Ensure appropriate aircraft logbook **R}** (OPNAV 4790/25A) and SE record (OPNAV 4790/51) entries are made for hydraulic samples.

d. **R}** Screen MAFs/WOs in-process to ensure that hydraulic sampling was conducted and annotated per NAVAIR 01-1A-17, MIMs, and MRCs.

NOTE: Includes verifying hydraulic samples are recorded for aircraft and SE transferred from a depot or commercial repair activity.

10.5.3.7 The Logs and Records Section shall:

a. Place the previous and current Hydraulic Contamination Control Trend Analysis Chart (Figure 10.5-4) with the aircraft logbooks prior to aircraft transfer. When hydraulic system sampling reveals Navy Standard Class 5 contamination is exceeded, evidence of water, or any other form of contamination requiring decontamination per NAVAIR 01-1A-17, make an entry in the Miscellaneous/History (OPNAV 4790/25A) section of the aircraft logbook (indicate date, type contamination, class, method of decontamination, and appropriate reference). In addition, during aircraft acceptance from a depot, commercial repair activity, or another reporting custodian, hydraulic system sampling results shall be entered in the Miscellaneous/History (OPNAV 4790/25A) section.

b. Place the previous and current Hydraulic Contamination Control Trend Analysis Chart (Figure 10.5-4) with the SE Custody and Maintenance History Record (OPNAV 4790/51) prior to SE transfer. When hydraulic sampling reveals Navy Standard Class 3 contamination is exceeded, evidence of water, or any other form of contamination requiring decontamination per NAVAIR 01-1A-17, make an entry in the SE Custody and Maintenance History Record (OPNAV 4790/51) Miscellaneous History Record section (indicate date, type contamination, class, method of decontamination, and appropriate reference). In addition, during SE acceptance from a depot, commercial repair activity, or another reporting custodian, hydraulic system sampling shall be performed and the results entered in the **A}** Miscellaneous History Records section of the SE Custody and Maintenance History Record (OPNAV 4790/51).

10.5.3.8 The Work Center Supervisor shall:

a. Become thoroughly familiar with the requirements of the references in paragraph 10.5.1.2, applicable MIMS, MRCs and this instruction.

b. Ensure Hydraulic Contamination Control Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP

Indoctrination Training sheet (Figure 10.1-5) or D-level equivalent training sheet in the individual's qualification/certification record.

c. Each area responsible for hydraulic component/system repair, disassembly, inspection, reassembly, and testing have ready access to and complies with the hydraulic system contamination control requirements and procedures of references in paragraph 10.5.1.2, applicable MIMs and MRCs, and this instruction.

d. Ensure Hydraulic Contamination Control Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record.

e. Ensure all hydraulic component/system repair, disassembly, inspection, reassembly, and testing are conducted per NAVAIR 01-1A-17 and NAVAIR 01-1A-20.

f. Ensure all internal and external hoses on aircraft, SE units used to apply pressure to aircraft systems, and SE servicing units are marked/etched per NAVAIR 01-1A-20 or applicable MIMs/MRCs.

g. Ensure NAVAIR 01-1A-17, NAVAIR 01-1A-20, A and applicable MIMs/MRCs are required reading for indoctrination training for those personnel working on hydraulic systems.

h. Maintain high standards of housekeeping where hydraulic maintenance/sampling is performed.

i. Whenever aircraft/SE hydraulic system integrity is broken, ensure fittings, lines, and components are capped/plugged immediately (using approved closures), and are handled and stored in a manner that prevents damage and contamination.

j. Maintain the Hydraulic Fluid Contamination Analysis Kit, Part Number 57L414, and electronic particle counter in an RFI status per applicable MIMs/MRCs and preoperational requirements.

k. Report suspected contamination to Maintenance Control/Production Control and QA.

l. Ensure hydraulic fluid analyses are performed per NAVAIR 01-1A-17, MIMs/MRCs, equipment preoperational requirements, and during aircraft and SE acceptance inspections.

m. Ensure only authorized fluid dispensing SE is used and is maintained in a high standard of cleanliness. All servicing SE will be equipped with 3-micron (absolute) filtration. SE used to service or maintain aircraft hydraulic systems are configured, maintained, and operated in a manner consistent with detail and requirements of the Hydraulic Contamination Control Program. Refer to Sections VI and VII of NAVAIR 01-1A-17 for applicable minimum requirements.

n. Ensure all hydraulic samples performed are sent to QA for hydraulic contamination control trend analysis.

NOTE: An effective fluid surveillance program is established and remains in affect. Hydraulic fluid from all operating equipment shall be sampled and tested on a periodic basis. When equipment fails to meet the required Navy standard class level, decontamination procedures shall be used to restore the affected system to an acceptable level.

10.5.3.9 Personnel certified by a previous command shall perform required reading for the specific T/M/S, pass the written examination, and demonstrate practical proficiency to a qualified QAR. The written examination is not required for those personnel currently certified by a previous command with the same T/M/S aircraft. All other sections of Figures 10.5-2 and 10.5-3 shall be annotated as previously complied with. Previous certification records shall be retained in the qualification/certification record.

From: _____
(Department Head)

To: _____
(Individual Designated)

Via: _____
(Hydraulic Contamination Control Program Manager)

Subj: HYDRAULIC CONTAMINATION CONTROL ANALYSIS TECHNICIAN
DESIGNATION

Ref: (a) COMNAVAIRFORINST 4790.2

1. You are designated as a Hydraulic Contamination Control Analysis Technician and shall perform your duties per reference (a).
2. I certify that I have read and understand the duties and responsibilities of the assigned billet and shall perform the duties to the best of my ability.

_____ Assignee Signature	_____ Date
_____ Hydraulic Contamination Control Program Manager Signature	_____ Date
_____ Department Head Signature	_____ Date

Original to:
Individual's Qualification/Certification Record

Figure 10.5-1: Hydraulic Contamination Control Designation

NAME _____ RATE/RANK _____

A. REQUIRED READING:

- | | | |
|--|-----------------|------------|
| 1. COMNAVAIRFORINST 4790.2
Chapter 10, paragraph 10.5 | Signature _____ | Date _____ |
| 2. NAVAIR 01-1A-17 | Signature _____ | Date _____ |
| 3. NAVAIR 01-1A-20 | Signature _____ | Date _____ |
| 4. NAVAIR 17-15-521 | Signature _____ | Date _____ |
| 5. NAVAIR 17-15BF-97 | Signature _____ | Date _____ |
| 6. _____ | Signature _____ | Date _____ |
| 7. _____ | Signature _____ | Date _____ |
| 8. _____ | Signature _____ | Date _____ |
| 9. _____ | Signature _____ | Date _____ |
| 10. _____ | Signature _____ | Date _____ |
| 11. _____ | Signature _____ | Date _____ |
| 12. _____ | Signature _____ | Date _____ |
| 13. _____ | Signature _____ | Date _____ |

Blocks (6) through (13) are for T/M/S specific MIMs/MRCs

NOTE: All required reading shall be accomplished prior to taking hydraulic samples and performing analysis.

Figure 10.5-2: Hydraulic Contamination Control Qualification/Certification Worksheet

B. OJT: Five samples must be taken, analyzed, and witnessed by a CDI. The sixth sample shall be taken and analyzed while being monitored by a qualified QAR. (This section is required for both hydraulic fluid contamination analysis kit and electronic particle counter qualification.)

Sample Number	Sample Analyzed (Method)	Source (Type Equip)	Date	CDI/QAR Initials
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____

C. TESTING: Complete open book Hydraulic Contamination Control Program test (80% minimum).

Score _____ Date _____ QAR Signature _____

D. CERTIFICATION VERIFICATION/REQUEST:

The above named individual has satisfactorily completed all prerequisites for hydraulic system sample analysis certification.

Hydraulic Contamination Control Program Manager Signature Date

Figure 10.5-3: Hydraulic Contamination Control Qualification/Certification Worksheet (continued)

DATE	CLASS	JCN	TAKEN BY	REASON	QAR

CLASS= (U) UNSAT; (1-5) FOR CLASSES 1 THROUGH 5

10-44

10.6 Tire and Wheel Maintenance Safety Program (NAMPSOP)

10.6.1 Introduction

10.6.1.1 The Tire and Wheel Maintenance Safety Program establishes policy, responsibilities, and requirements for implementing procedures for maintaining and storing aircraft, SE, and AWSE tires and wheels in all Navy and Marine Corps aviation activities.

10.6.1.2 References:

- a. NAVAIR 04-10-506, Aircraft Tires and Tubes.
- b. NAVAIR 01-1A-503, Maintenance of Aeronautical Antifriction Bearings.
- c. OPNAVINST 5100.19, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat.
- d. OPNAVINST 5100.23, Navy Occupational Safety and Health (NAVOSH) Program Manual.
- e. NAVAIR 00-80T-96, Basic Handling & Safety Manual, US Navy Support Equipment Common.
- f. NAVAIR 01-1A-20, Aviation Hose and Tube Manual.
- g. NAVAIR 01-1A-509-2, Cleaning and Corrosion Control, Volume II, Aircraft.
- h. NAVAIR 04-10-1, Aircraft Wheels.
- i. NAVAIR 04-10-508, Application Table for Aircraft Tires and Tubes.
- j. NAVAIR 17-1-123, Tire Inflator Assembly Kit Part Number M85352/1. Dual Chuck Stem Gage Part Number M85352/4.
- k. NAVAIR 17-15G-1, Aircraft Tire Inflator/Monitor (631AS100-1) Organizational and Intermediate with IPB.
- l. NAVAIR 17-600-174-6-1, Preoperational Checklist Tire Inflator Assembly Kit (Part Number M85352/1), Dual Chuck Stem Gage (Part Number M85352/4).
- m. NAVAIR 17-1-125, Support Equipment Cleaning, Prevention, and Corrosion Control.
- n. NAVAIR 17-1-129, Support Equipment Tire and Wheel Assemblies.
- o. NAVAIR 19-1-55, Aircraft Wheel Holder and Tire Bead Breaking Machine.

10.6.2 Discussion

10.6.2.1 Mishandling of aviation tires and wheels can result in the injury or death of aviation maintenance personnel. Many accidents have been caused by failure to follow established tire/wheel maintenance procedures and safety precautions, usually due to inadequate training and supervision. Additionally, faulty I-level maintenance procedures and the inability of O-level maintenance personnel to recognize visible tire/wheel defects have caused catastrophic tire/wheel assembly failures.

10.6.2.2 The LMTC for tires is COMMANDING OFFICER, FRC SW NORTH ISLAND, CODE 4.9.7.4, SAN DIEGO CA 92135-7058, DSN 735-8675 or COMM (619) 545-8675.

10.6.2.3 The ISSC for SE/AWSE Tires/Wheels is COMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.8.7.2, LAKEHURST NJ 08733-5000, DSN 624-7906 or COMM (732) 323-7906.

10.6.2.4 Aircraft, SE, and AWSE wheel assemblies are of three basic types; solid rim, split rim, and demountable flange. Split rim and demountable flange wheels are susceptible to explosive separation because of their basic design. The destructive potential of air or nitrogen under pressure is tremendous. Inflated and partially inflated tires shall be handled with the same respect and precautions normally applied to handling live ordnance.

10.6.2.5 Individuals must be fully aware of safety precautions and correct tire/wheel maintenance procedures to ensure against personnel injury or tire/wheel failure after installation. Training, outlined in [Figures 10.6-1 through 10.6-17](#) (as applicable), shall be completed before personnel involved in maintenance of aircraft/SE/AWSE tires/wheels are certified to work independently.

10.6.2.6 O-level tire/wheel maintenance, accomplished by both O-level and I-level activities, is defined as removal, replacement, servicing, and handling of aircraft, SE, and AWSE wheel assemblies. I-level maintenance is defined as tear-down and build-up of aircraft, SE, and AWSE wheel assemblies and shall only be performed by activities authorized to accomplish I-level repair.

10.6.2.7 RFI aircraft tire/wheel assemblies shall not exceed 100 pounds PSIG or 50 percent of test pressure, whichever is less, while being stored. RFI SE/AWSE tire/wheel assemblies shall not exceed 15 pounds PSIG or 50 percent of service pressure, whichever is less, while being stored. All RFI tires being transported off station shall not exceed 25 pounds PSIG of pressure.

10.6.2.8 All aircraft tires are considered to be potentially rebuildable (retreadable), although due to technical or economic considerations certain tires are not being rebuilt. Tires shall not be discarded or scrapped until determined they are nonserviceable per NAVAIR 04-10-506. Strict adherence to these requirements will ensure a successful tire rebuilding (retreading) program.

10.6.2.9 To attain expected service life, aeronautical equipment bearings must be protected and maintained during mounting and assembly, while in storage, and throughout operating life. They shall be protected against rough or careless handling. Precautions to prevent contamination from abrasives, improper grease, solids, and fluids shall be instituted. Maintenance programs outlined in NAVAIR 01-1A-503 include periodic inspection and lubrication requirements.

10.6.2.10 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.6.3 Responsibilities; O-Level, IMA/FRC Activities

10.6.3.1 The MO shall:

a. Designate, in writing via the MMP, a certified tire/wheel individual as the Tire and Wheel Maintenance Safety Program Manager. The Production Officer shall designate, in writing, the Tire and Wheel Maintenance Safety Program Manager for FRC activities.

(1) An SE/AWSE I-level maintenance certified individual as the SE/AWSE Tire and Wheel Maintenance Safety Program Manager for the AIMD/MALS.

(2) An aircraft I-level maintenance certified individual as the Aircraft Tire and Wheel Maintenance Safety Program Manager for the AIMD/MALS.

(3) An aircraft O-level maintenance certified individual as the Aircraft Tire and Wheel Maintenance Safety Program Manager for O-level activities.

b. Develop local command procedures (as required) per [Appendix D](#). The Production Officer shall develop local command procedures (as required) per Appendix D for FRCs.

c. Certify personnel who have completed tire/wheel maintenance safety training requirements, using [Figures 10.6-1 through 10.6-17](#) (as applicable).

10.6.3.2 The Supply Officer shall:

a. Provide input to the MO for the development of local command procedures (as required) per [Appendix D](#).

b. Ensure training is conducted for personnel handling and transporting tire/wheel assemblies per paragraph 10.6.3.3.b below.

c. Ensure personnel are briefed on the hazards, safety, and handling procedures associated with Beryllium (if applicable).

10.6.3.3 The Program Manager shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Be knowledgeable of all references listed in [paragraph 10.6.1.2](#) and this instruction.

b. Provide indoctrination training to applicable personnel, prior to performing tire/wheel maintenance, regardless of rating/MOS, placing emphasis on hazards associated with aircraft/SE/AWSE tires/wheels. Train personnel transporting tire/wheel assemblies to enable them to identify inflated/deflated tires, be aware of associated safety hazards, and properly handle/protect bearings. (Supply Departments without the required expertise shall use appropriate IMA/FRC or NATEC personnel to conduct training). Provide follow-on training as necessary.

NOTE: A} At the FRC D-level, develop an open-book written examination to support the above indoctrination with particular emphasis on tire and wheel safety.

c. Ensure personnel selected to perform aircraft/SE/AWSE tire/wheel maintenance are fully trained and qualified prior to submitting [Figures 10.6-1 through 10.6-17](#) (if applicable) for certification.

d. Maintain a program file to include:

(1) Applicable POCs.

(2) Program related correspondence and messages.

(3) Applicable references or cross reference locator sheets.

e. Use CSEC information and reports (provided by the Program Monitor) to identify specific areas of concern and to determine what steps are required for improvement.

f. Ensure sufficient tire/wheel maintenance personnel are certified.

g. Ensure the following video cassettes are available for use as instructional aids (as required):

- (1) High Pressure Gases in Aviation (24795DN) (required).
- (2) Rebuilding High-Speed High-Performance Naval Aircraft Tires (25784).
- (3) Servicing Multi-Piece Wheel Rims (OSHA) (recommended, SE and AWSE only).
- (4) Servicing Single Piece Wheel Assemblies (OSHA) (recommended, SE and AWSE only).

10.6.3.4 The QA Officer shall designate, in writing via the MMP/SME listing, a certified tire/wheel QAR/QA Specialist as the Tire and Wheel Maintenance Safety Program Monitor. This assignment does not preclude other certified QARs/QA specialists from monitoring this program but places the overall responsibility with one individual.

10.6.3.5 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Assist in preparing **R} DRs**.
- c. Develop an open-book written examination with emphasis on safety. Any QAR/QA Specialist may administer the examination. The minimum passing score is 90 percent.

NOTES: 1. A} At the FRC D-level, assist designated Program Manager in developing an open-book examination pursuant to [paragraph 10.6.3.3 \(b\)](#).

2. A} At the FRC D-level, any QA specialist or designated certified artisan may administer the examination, with a minimum passing score of 90 percent.

10.6.3.6 Maintenance/Production Control shall:

- a. Assist the Program Manager coordinating training for personnel handling and transporting tire/wheel assemblies.
- b. Ensure personnel handling and transporting tire/wheel assemblies are trained per [paragraph 10.6.3.3.b](#).

10.6.3.7 Work center supervisors shall:

- a. Ensure Tire and Wheel Maintenance Safety Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.
- b. Caution personnel performing tire/wheel maintenance to handle inflated and partially inflated wheel assemblies with the same respect and care as live ordnance, due to the destructive potential of gas under pressure.
- c. Display the Aircraft Tires, Tubes and Wheels Inflation/Deflation Safety Precautions Poster (C12G1-1163 Rev. Mar 98) in work centers performing tire/wheel maintenance functions. Posters may be obtained by contacting: COMMANDER, NAVAL SAFETY CENTER, 375 A STREET, NORFOLK VA 23511-4399 or web site: <http://www.safetycenter.navy.mil>.
- d. Ensure bearings are protected from careless handling and contamination from abrasives, improper greases, solids, fluids, and salt water per NAVAIR 01-1A-503.

10.6.3.8 Previous Certification. Personnel certified by a previous command on the same T/M/S aircraft/SE/AWSE tires/wheels shall pass the written examination and demonstrate practical proficiency to a certified tire/wheel QAR/QA Specialist. All other sections of [Figures 10.6-1](#) through [10.6-17](#) shall be annotated "previously complied with". Previous certification records shall be retained in the qualification/certification record.

COMNAVAIRFORINST 4790.2A
15 Feb 2008

Command: _____ W/C: _____ Date: _____
 Name: _____ Rate/Rank: _____
 W/C Supervisor Indoc: Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2A	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96	_____	_____	_____
E. NAVAIR 01-1A-20, para 5-4, a/b	_____	_____	_____
F. NAVAIR 01-1A-503	_____	_____	_____
G. NAVAIR 01-1A-509-2	_____	_____	_____
H. NAVAIR 04-10-1	_____	_____	_____
I. NAVAIR 04-10-506	_____	_____	_____
J. NAVAIR 04-10-508	_____	_____	_____
K. NAVAIR 17-1-123	_____	_____	_____
L. NAVAIR 17-15G-1	_____	_____	_____
M. NAVAIR 17-600-174-6-1	_____	_____	_____
N. Applicable MIMs/MRCs (List each applicable publication)	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

2. Safety Films:	Trainee Initials	Supervisor Signature	Date
High Pressure Gases In Aviation (24795DN) (Required)	_____	_____	_____
Rebuilding High-Speed High-Per- formance Naval Aircraft Tires (25784)	_____	_____	_____

NOTE: All required reading and viewing of video shall be accomplished prior to starting the tire/wheel maintenance OJT.

3. Completed course of instructions: Nitrogen Servicing Equipment

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician, certified in tire and wheel maintenance, will sign off/date each area of OJT each time the individual performs a task under supervision (applicable for A through J).

NOTE: Each OJT area requires a minimum of three tasks for each T/M/S.

A. (T/M/S) _____ Nose/Tail Wheel Assembly	Signature	Date
Bearings Removal/Cleaning/Inspection/Handling/ Lubrication/Installation	_____	_____
	_____	_____

Figure 10.6-1: Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements - O-Level

	Signature	Date
B. (T/M/S) _____ Main Mount Wheel Bearings Removal/Cleaning/Inspection/Handling/ Lubrication/Installation	_____ _____ _____	_____ _____ _____
C. (T/M/S) _____ Outrigger Wheel Bearings Removal/Cleaning/Inspection/Handling/ Lubrication/Installation	_____ _____ _____	_____ _____ _____
D. (T/M/S) _____ Nose/Tail Wheel Assembly Deflation/Removal/Inspection/Handling/ Lubrication/Installation/Service	_____ _____ _____	_____ _____ _____
E. (T/M/S) _____ Main Mount Wheel Assembly Deflation/Removal/Inspection/Handling/ Lubrication/Installation/Service	_____ _____ _____	_____ _____ _____
F. (T/M/S) _____ Outrigger Wheel Assembly Deflation/Removal/Inspection/Handling/ Lubrication/Installation/Service	_____ _____ _____	_____ _____ _____
G. (T/M/S) _____ Operation of Remote Inflator Assembly	_____ _____ _____	_____ _____ _____
H. (T/M/S) _____ Aircraft Jacking Procedures	_____ _____ _____	_____ _____ _____
I. Documentation Procedures	_____ _____ _____	_____ _____ _____
J. Beryllium Safety Procedures (if applicable)	_____ _____ _____	_____ _____ _____

5. Certification: A QAR, certified in tire and wheel maintenance, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions. One separate line for each T/M/S is required (applicable for A through J).

A. (T/M/S) _____ Nose/Tail Wheel Bearings Removal/Inspection/Handling/Installation

Signature: _____ Date: _____

**Figure 10.6-2: Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements - O-Level
(continued)**

B. (T/M/S) _____ Main Mount Wheel Bearings Removal/Inspection/Handling/Installation

Signature: _____ Date: _____

C. (T/M/S) _____ Outrigger Wheel Bearings Removal/Inspection/Handling/Installation

Signature: _____ Date: _____

D. (T/M/S) _____ Nose/Tail Wheel Assembly Removal/Inspection/Handling/Installation/Service

Signature: _____ Date: _____

E. (T/M/S) _____ Main Mount Wheel Assembly Removal/Inspection/Handling/Installation/Service

Signature: _____ Date: _____

F. (T/M/S) _____ Outrigger Wheel Assembly Removal/Inspection/Handling/Installation/Service

Signature: _____ Date: _____

G. (T/M/S) _____ Operation of Remote Inflator Assembly

Signature: _____ Date: _____

H. (T/M/S) _____ Aircraft Jacking Procedures

Signature: _____ Date: _____

I. (T/M/S) _____ Documentation Procedures

Signature: _____ Date: _____

J. (T/M/S) _____ Beryllium Safety Procedures (if applicable)

Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

QAR Signature: _____ Date: _____

**Figure 10.6-3: Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements - O-Level
(continued)**

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

This is to certify _____ has successfully
completed all established requirements for aircraft tire/wheel servicing/handling and is qualified to
perform tire/wheel servicing/handling on:

_____ (T/M/S) (Main/Nose/ Tail/Outrigger Assy)	_____ (MO Initials)	_____ (T/M/S) (Main/Nose/ Tail/Outrigger Assy)	_____ (MO Initials)
_____ (T/M/S) (Main/Nose/ Tail/Outrigger Assy)	_____ (MO Initials)	_____ (T/M/S) (Main/Nose/ Tail/Outrigger Assy)	_____ (MO Initials)
_____ (T/M/S) (Main/Nose/ Tail/Outrigger Assy)	_____ (MO Initials)	_____ (T/M/S) (Main/Nose/ Tail/Outrigger Assy)	_____ (MO Initials)

MO Signature: _____ Date: _____

Original to:
Individual's Qualification/Certification Record

**Figure 10.6-4: Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements - O-Level
(continued)**

**COMNAVAIRFORINST 4790.2A
15 Feb 2008**

Command: _____ W/C: _____ Date: _____
 Name: _____ Rate/Rank: _____
 W/C Supervisor Indoc: Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2A	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96	_____	_____	_____
E. NAVAIR 01-1A-20, para 5-4, a/b	_____	_____	_____
F. NAVAIR 17-1-123	_____	_____	_____
G. NAVAIR 17-1-125	_____	_____	_____
H. NAVAIR 17-1-129	_____	_____	_____
I. NAVAIR 17-600-174-6-1	_____	_____	_____
J. NAVAIR 01-1A-503	_____	_____	_____
K. NAVAIR 01-1A-509-2	_____	_____	_____
L. Applicable MIMs/MRCs (List each applicable publication)	_____	_____	_____

2. Safety Films:	Trainee Initials	Supervisor Signature	Date
Servicing Multi-Piece Wheel Rims (OSHA) (Recommended)	_____	_____	_____
Servicing Single-Piece Wheel Assemblies (OSHA) (Recommended)	_____	_____	_____
High Pressure Gases In Aviation (24795DN) (Required)	_____	_____	_____
Rebuilding High-Speed High-Per- formance Naval Aircraft Tires (25784)	_____	_____	_____

NOTE: All required reading and viewing of video shall be accomplished prior to starting the tire/wheel maintenance OJT.

3. Completed course of instructions: Nitrogen Servicing Equipment

NOTE: Not required for AWSE qualifications/certifications.

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician, certified in tire and wheel maintenance, will sign off/date each area of OJT each time the individual performs a task under supervision (applicable for A through H).

NOTE: Each OJT area requires a minimum of three tasks for each type assembly.

**Figure 10.6-5: Support Equipment/Armament Weapons Support Equipment Tire/Wheel Maintenance
Qualification/Certification Requirements - O-Level**

	Signature	Date
A. Bearings/Removal, Cleaning/ Inspection/Handling/Lubrication/Installation (if applicable)	_____	_____
	_____	_____
	_____	_____
B. Solid Rim Deflation/Removal/ Replacement/Service	_____	_____
	_____	_____
	_____	_____
C. Split Rim Deflation/Removal Replacement/Service	_____	_____
	_____	_____
	_____	_____
D. Demountable Flange Deflation/ Removal/Inspection/Service	_____	_____
	_____	_____
	_____	_____
E. SD-2 Spotting Dolly Deflation/ Removal/Replacement/Service (if applicable)	_____	_____
	_____	_____
	_____	_____
F. Operation of Ship's Nitrogen/ Air Servicing Equipment/Remote Inflator Assembly (if applicable)	_____	_____
	_____	_____
	_____	_____
G. Equipment Jacking Procedures	_____	_____
	_____	_____
	_____	_____
H. Documentation Procedures	_____	_____
	_____	_____
	_____	_____

5. Certification: A QAR, certified in tire and wheel maintenance, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.

A. Bearing Removal/Cleaning/Inspection/Handling/Lubrication/Installation (if applicable)

Signature: _____ Date: _____

B. Solid Rim Deflation /Removal/Replacement/Service

Signature: _____ Date: _____

C. Split Rim Deflation /Removal/Replacement/Service

Signature: _____ Date: _____

Figure 10.6-6: Support Equipment/Armament Weapons Support Equipment Tire/Wheel Maintenance Qualification/Certification Requirements - O-Level (continued)

D. Demountable Flange Deflation /Removal/Replacement /Service

Signature: _____ Date: _____

E. SD-2 Spotting Dolly Deflation/Removal/Replacement/Service (if applicable)

Signature: _____ Date: _____

F. Operation of Ship's Nitrogen/Air Servicing Equipment/Remote Inflator Assembly

Signature: _____ Date: _____

G. Equipment Jacking Procedures

Signature: _____ Date: _____

H. Documentation Procedures

Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

QAR Signature: _____ Date: _____

**Figure 10.6-7: Support Equipment/Armament Weapons Support Equipment Tire/Wheel Maintenance
Qualification/Certification Requirements - O-Level (continued)**

COMNAVAIRFORINST 4790.2A
15 Feb 2008

Command: _____ W/C: _____ Date: _____

Name: _____ Rate/Rank: _____

W/C Supervisor Indoc: Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2A	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96	_____	_____	_____
E. NAVAIR 01-1A-20, para 5-4, a/b	_____	_____	_____
F. NAVAIR 01-1A-503	_____	_____	_____
G. NAVAIR 01-1A-509-2	_____	_____	_____
H. NAVAIR 04-10-1	_____	_____	_____
I. NAVAIR 04-10-506	_____	_____	_____
J. NAVAIR 04-10-508	_____	_____	_____
K. NAVAIR 17-1-123	_____	_____	_____
L. NAVAIR 17-15G-1	_____	_____	_____
M. NAVAIR 17-600-174-6-1	_____	_____	_____
N. NAVAIR 19-1-55	_____	_____	_____
Applicable MIMs/MRCs (List each applicable publication)	_____	_____	_____

2. Safety Films:	Trainee Initials	Supervisor Signature	Date
High Pressure Gases In Aviation (24795DN) (Required)	_____	_____	_____
Rebuilding High-Speed High-Per- formance Naval Aircraft Tires (25784)	_____	_____	_____

NOTE: All required reading and viewing of video shall be accomplished prior to starting the tire/wheel maintenance OJT.

3. Completed course of instructions: Nitrogen Servicing Equipment

NOTE: Not required for AWSE qualifications/certifications.

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician, certified in tire and wheel maintenance, will sign off/date each area of OJT each time the individual performs a task under supervision (applicable for A through I).

NOTE: Each OJT area requires a minimum of three tasks for each P/N.

	Signature	Date
A. (P/N) _____ Tire /Wheel Assembly	_____	_____
Bearings Removal/Cleaning/Inspection	_____	_____
Lubrication/Installation	_____	_____

Figure 10.6-9: Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements - FRC/AIMD

B. (P/N) _____ Tire /Wheel Assembly Tear Down/Build-Up	_____	_____
	_____	_____
	_____	_____
C. (P/N) _____ Tire /Wheel Assembly Bearings Removal/Cleaning/Inspection Lubrication/Installation	_____	_____
	_____	_____
	_____	_____
D. (P/N) _____ Tire /Wheel Assembly Tear Down/Build-Up	_____	_____
	_____	_____
	_____	_____
E. Use of Bead Breaker (if applicable)	_____	_____
	_____	_____
	_____	_____
F. Use of Inflation Cage	_____	_____
	_____	_____
	_____	_____
G. Operations of Nitrogen Servicing Equipment/Remote Inflator/Monitor Assembly	_____	_____
	_____	_____
	_____	_____
H. Documentation Procedures	_____	_____
	_____	_____
	_____	_____
I. Use/Handling of Beryllium	_____	_____
	_____	_____
	_____	_____

5. Certification: A QAR/QA Specialist, certified in tire and wheel maintenance, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions. One separate line for each T/M/S is required (applicable for A through I). **A} An artisan certified in tire and wheel maintenance and designated in writing by the Production Control officer/equivalent officer as certifier for tire and wheel practical examinations, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.**

A. (P/N) _____ Tire/Wheel Assembly Bearings Removal/Cleaning/Inspection/Lubrication
Installation

Signature: _____ Date: _____

B. (P/N) _____ Tire/Wheel Assembly Tear Down/Build-Up

Signature: _____ Date: _____

**Figure 10.6-10: R} Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements -
FRC/AIMD (continued)**

C. (P/N) _____ Tire/Wheel Assembly Bearings Removal/Cleaning/Inspection/Lubrication
Installation

Signature: _____ Date: _____

D. (P/N) _____ Tire/Wheel Assembly Tear Down/Build-Up

Signature: _____ Date: _____

E. Use of Bead Breaker (if applicable)

Signature: _____ Date: _____

F. Use of Inflation Cage

Signature: _____ Date: _____

G. Operation of Ship's Nitrogen Servicing Equipment/Remote Inflator/Monitor Assembly (if applicable)

Signature: _____ Date: _____

H. Documentation Procedures

Signature: _____ Date: _____

I. Use/Handling of Beryllium Assemblies (if applicable)

Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

R} QAR, QA Specialist, or
Certified Artisan Signature: _____

Date: _____

**Figure 10.6-11: R} Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements -
FRC/AIMD (continued)**

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

This is to certify: _____ has successfully
completed all established requirements for aircraft tire/wheel tear down/build-up and is qualified to
perform tire/wheel maintenance on:

(P/N Tire/Wheel Assembly)

(MO Initials)

(Type Assembly)

(MO Initials)

MO/FRC Equivalent Officer Signature: _____ Date: _____

Original to:
Individual's Qualification/Certification Record

**Figure 10.6-12: Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements -
FRC/AIMD (continued)**

SUPPLEMENTAL TIRE AND WHEEL CERTIFICATION

1. OJT: A certified technician will sign off/date each area of OJT each time the individual performs a task under supervision (applicable for A and B).

NOTE: Each OJT area requires a minimum of three tasks for each P/N.

	Signature	Date
A. (P/N) _____ Tire /Wheel Assembly	_____	_____
Bearings Removal/Cleaning/Inspection	_____	_____
Lubrication/Installation	_____	_____
B. (P/N) _____ Tire /Wheel Assembly	_____	_____
Tear Down/Build-Up	_____	_____
	_____	_____

2. Certification: A QAR/QA Specialist certified in tire and wheel maintenance, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.

A. (P/N) _____ Tire/Wheel Assembly Bearings Removal/Cleaning/Inspection/Lubrication
Installation

Signature: _____ Date: _____

B. (P/N) _____ Tire/Wheel Assembly Tear Down/Build-Up

Signature: _____ Date: _____

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

This is to certify _____ has successfully
completed all established requirements for aircraft tire/wheel tear down/build-up and is qualified to
perform tire/wheel maintenance on:

P/N Tire/Wheel Assembly

MO Initials

P/N Tire/Wheel Assembly

(MO Initials)

MO/FRC Equivalent Officer Signature: _____ Date: _____

Original to:
Individual's Qualification/Certification Record

**Figure 10.6-13: Aircraft Tire/Wheel Maintenance Qualification/Certification Requirements - I-Level
(continued)**

Command: _____ W/C: _____ Date: _____

Name: _____ Rate/Rank: _____

W/C Supervisor Indoc Signature: _____ Date: _____

1. Required Reading: (applicable sections)	Trainee Initials	Supervisor Signature	Date
A. COMNAVAIRFORINST 4790.2A	_____	_____	_____
B. OPNAVINST 5100.19, VOL I Chapters A3, B5, B6, B12	_____	_____	_____
C. OPNAVINST 5100.23 Chapters 7, 10, 15, 19, 20	_____	_____	_____
D. NAVAIR 00-80T-96	_____	_____	_____
E. NAVAIR 01-1A-20, para 5-4, a/b	_____	_____	_____
F. NAVAIR 17-1-123	_____	_____	_____
G. NAVAIR 17-1-125	_____	_____	_____
H. NAVAIR 17-1-129	_____	_____	_____
I. NAVAIR 17-600-174-6-1	_____	_____	_____
J. NAVAIR 19-1-55	_____	_____	_____
K. Applicable MIMs/MRCs (List each applicable publication)	_____	_____	_____

2. Safety Films:	Trainee Initials	Supervisor Signature	Date
Servicing Multi-Piece Wheel Rims (OSHA A110) (Recommended)	_____	_____	_____
Servicing Single Piece-Wheel Assemblies (OSHA A113) (Recommended)	_____	_____	_____
High Pressure Gases In Aviation (24795DN) (Required)	_____	_____	_____
Rebuilding High-Speed High-Per- formance Naval Aircraft Tires (25784)	_____	_____	_____

NOTE: All required reading and viewing of video shall be accomplished prior to starting the tire/wheel maintenance OJT.

3. Completed course of instructions: Nitrogen Servicing Equipment

Phase I Completion Date: _____ Phase II Completion Date: _____

4. OJT: A technician, certified in tire and wheel maintenance, will sign off/date each area of OJT each time the individual performs a task under supervision (applicable for A through I).

NOTE: Each OJT area requires a minimum of three tasks for each type assembly.

	Signature	Date
A. Bearings/Removal Cleaning/ Inspection Handling/Lubrication/ Installation (if applicable)	_____ _____ _____	_____ _____ _____

**Figure 10.6-14: Support Equipment/Armament Weapons Support Equipment Tire/Wheel
Maintenance Qualification/Certification Requirements - FRC/AIMD**

B. Tear Down/Build-Up Inflation of Solid Rim Assembly	_____	_____
	_____	_____
	_____	_____
C. Tear Down/Build-Up Inflation of Split Rim Assembly	_____	_____
	_____	_____
	_____	_____
D. Tear Down/Build-Up Inflation Of Demountable Flange Assembly	_____	_____
	_____	_____
	_____	_____
E. Tear Down/Build-Up Inflation of SD-2 Spotting Dolly (if applicable)	_____	_____
	_____	_____
	_____	_____
F. Use of Bead breaker (if applicable)	_____	_____
	_____	_____
	_____	_____
G. Use of Inflation Cage	_____	_____
	_____	_____
	_____	_____
H. Operation of Nitrogen/Air Servicing Equipment/Remote Inflator Assembly	_____	_____
	_____	_____
	_____	_____
I. Documentation Procedures	_____	_____
	_____	_____
	_____	_____

5. Certification: A QAR/QA Specialist, certified in tire and wheel maintenance, will sign each area only after the individual has demonstrated proficiency and awareness of all procedures and safety precautions.

A. Bearing Handling/Lubrication Procedures (if applicable)

Signature: _____ Date: _____

B. Tear down/Build-Up/Inflation of Solid Rim Assembly (if applicable)

Signature: _____ Date: _____

**Figure 10.6-15: Support Equipment/Armament Weapons Support Equipment Tire/Wheel
Maintenance Qualification/Certification Requirements - FRC/AIMD (continued)**

C. Tear Down/Build-Up/Inflation of Split Rim Assembly

Signature: _____ Date: _____

D. Tear Down/Build-Up/Inflation of Demountable Flange Assembly

Signature: _____ Date: _____

E. Tear Down/Build-Up/Inflation of SD-2 Spotting dolly Assembly (if applicable)

Signature: _____ Date: _____

F. Use of Bead Breaker (if applicable)

Signature: _____ Date: _____

G. Use of Inflation Cage

Signature: _____ Date: _____

H. Operation of Air Servicing Equipment/Remote Inflator Assembly

Signature: _____ Date: _____

I. Documentation Procedures

Signature: _____ Date: _____

WRITTEN TEST SCORE (Minimum 90 percent): _____

QAR/QA Specialist Signature: _____ Date: _____

**Figure 10.6-16: Support Equipment/Armament Weapons Support Equipment Tire/Wheel
Maintenance Qualification/Certification Requirements - FRC/AIMD (continued)**

Program Manager Recommendation

Program Manager Signature: _____ Date: _____

This is to certify: _____ has successfully
completed all established requirements for SE/AWSE servicing/handling and is qualified to perform
tire/wheel servicing/handling on:

<u>Solid Rim</u> (Type Assembly)	_____ (MO Initials)	<u>Split Rim</u> (Type Assembly)	_____ (MO Initials)
<u>Demountable Flange</u> (Type Assembly)	_____ (MO Initials)	<u>SD-2 Spotting Dolly</u> (Type Assembly)	_____ (MO Initials)
_____ (Type Assembly)	_____ (MO Initials)	_____	_____

MO/FRC Equivalent Officer Signature: _____ Date: _____

Original to:
Individual's Qualification/Certification Record

**Figure 10.6-17: Support Equipment/Armament Weapons Support Equipment Tire/Wheel
Maintenance Qualification/Certification Requirements - FRC/AIMD (continued)**

10.7 Quality Assurance (QA) Audit Program (NAMPSOP)

10.7.1 Introduction

The QA Audit Program establishes policy, responsibilities, and requirements for evaluating performance throughout the Maintenance Department.

10.7.2 Discussion

10.7.2.1 Audits serve as an orderly method of identifying, investigating, and correcting deficiencies on a scheduled and unscheduled basis. The CSEC provides a standardized objective measurement tool to conduct audits.

10.7.2.2 The QA Division is charged with managing a comprehensive audit program that encompasses all programs managed and monitored per this instruction.

10.7.2.3 CSEC generates all checklists for work center, program, and special audits, provides collection of audit discrepancy data, and produces reports. The CSEC database must be loaded on QA's computer and is distributed with three selections, AMMT, Wing, and Activity:

- a. The AMMT selection is used by TYCOMs for auditing subordinate activities. It also allows for the addition of supplemental questions for use and distribution. The AMMT selection also creates reports for statistical analysis of subordinate commands.
- b. The Wing selection is used for auditing subordinate activities. It also allows for the addition of supplemental questions for use and distribution. The Wing selection also creates reports for statistical analysis of subordinate commands.
- c. The Activity selection is used by O-level and I-level activities to audit work centers and programs per this instruction. It also allows for the addition of supplemental questions.

10.7.2.4 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.7.3 Responsibilities

10.7.3.1 COMNAVAIRSYSCOM (AIR-6.8.2.2) shall maintain and update CSEC software and core question database and coordinate changes to CSEC.

10.7.3.2 The MO shall:

- a. Designate a Program Manager for each program monitored/managed by QA and list programs and individuals designated in the MMP.

NOTE: OMDs and detachments with four or fewer aircraft, for example, HC/HSL/VRC/VQ detachments, shall assign a Program Petty Officer/NCO based upon work center organization in [Chapter 3](#).

- b. Review/analyze CSEC reports and provide appropriate direction to division officers and program managers.
- c. Ensure corrective action and QA follow-up on discrepant areas are performed within a reasonable time frame (normally 10 working days) and that the corrective action is adequate.

10.7.3.3 The QA Officer shall designate, in writing via the MMP, the QA Supervisor as the QA Audit Program Manager.

10.7.3.4 The Program Manager shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be knowledgeable of CSEC and provide indoctrination training to all work center supervisors. Training shall emphasize CSEC audit reports, program manager responsibilities, and overall audit process.
- b. Distribute applicable CSEC audit checklists to each Work Center Supervisor and Program Manager.
- c. Establish a schedule to ensure all work centers and programs are audited within established time frames.
- d. Ensure results of all audits are entered in the CSEC database. If no discrepancies were noted, the entries should reflect such.
- e. Route results of all audits to the MO and applicable Program Manager via the chain of command.
- f. Maintain audit files for 1 year. These files shall include completed CSEC discrepancy sheets, corrective actions, QA follow-up annotations, and accompanying routing forms.
- g. Ensure QARs are adequately trained and possess sufficient knowledge to perform audits. Monitors shall be designated via the MMP. In all cases, it is imperative that QARs are knowledgeable in each and every aspect of their assignments.
- h. Schedule QARs to perform audits. QAR assignments should be rotated to decrease complacency, increase audit effectiveness, and provide QARs with a well-rounded education in program management.
- i. Ensure the D-level artisans assigned to interdict BCMs at I-level FRCs are monitored using CSEC to ensure compliance with the NAMP and local instructions.

10.7.3.5 Work center supervisors shall:

- a. Ensure Quality Assurance Audit Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record.
- b. Be familiar with applicable CSEC areas.
- c. Use CSEC to perform periodic self-audits on work center and applicable programs.
- d. Ensure corrective action is taken on all discrepancies noted during audits. Corrective action will include action taken to preclude recurrence, for example, training provided by the Program Manager, and clarification provided by QARs.
- e. Accompany QARs during audits.

10.7.4 Work Center, Program, and Special Audits

10.7.4.1 QA shall conduct work center audits semiannually to evaluate overall quality of each work center's performance. As a minimum, the following items shall be evaluated:

- a. Personnel and skills.

- b. Dispersed Technical Publications Library.
- c. Adherence to directives and procedures.
- d. Adequacy and availability of written processes, tests, and inspection procedures.
- e. Availability, calibration status, and proper use of test and measuring devices.
- f. Certification of personnel who perform special tasks, for example, NDI, welding, 2M repair, explosive handling, tire and wheel maintenance, hydraulic contamination control, aircraft/SE painting, Aircraft Confined Space EA, test cell operator, and ABO surveillance.
- g. Licensing of personnel for aircraft taxi and SE operation and engine/APU turnup authorization.
- h. Handling, packaging, protection, and storage of aeronautical material.
- i. Compliance with fire and safety regulations.
- j. Configuration of aircraft, components, and SE.
- k. Accuracy of aircraft/equipment logs and records.
- l. Material condition of SE.
- m. A} AMMRL.
- n. A} AAE.
- o. Validation of VIDS boards and operating procedures if using VIDS, or validation of current job status or Work Center Work Load Report if operating NALCOMIS.
- p. FOD Prevention.
- q. Cleanliness and condition of spaces.
- r. Accuracy and proper use of the MDS and NALCOMIS.
- s. Maintenance Training.

NOTE: For reasons of objectivity and impartiality, a common practice is for QA-related work center audits (any work center which begins with the numbers 04) to be conducted by knowledgeable individuals not assigned to that QA work center's division. While not a requirement, this practice provides QA managers with an unbiased perspective of their division they would not otherwise have access to.

10.7.4.2 Program audits evaluate specific programs, providing a systematic and coordinated method of identifying deficiencies and determining adequacy of and adherence to technical publications and instructions. QA shall audit the following programs, at a minimum, annually:

- Maintenance In-Service Training Program
- Fuel Surveillance Program
- Navy Oil Analysis Program
- Aviators Breathing Oxygen Surveillance Program
- Quality Assurance Audit Program
- Hydraulic Contamination Control Program
- Tire and Wheel Maintenance Safety Program
- Oil Consumption Program
- Naval Aviation Maintenance Discrepancy Reporting Program

Technical Directive Compliance Program
Foreign Object Damage Prevention Program
Tool Control Program
Corrosion Prevention and Control Program
Plane Captain Qualification Program
Egress/Explosive System Checkout Program
Support Equipment Operator Training and Licensing Program
Support Equipment Planned Maintenance System Program
Naval Aviation Metrology and Calibration Program
Hazardous Material Control and Management Program
Individual Component Repair List Program
Electromagnetic Interference/Electrostatic Discharge Program
Miniature/Microminiature Program
Nondestructive Inspection Program
Explosive Handling Personnel Qualification and Certification Program
Aeronautical Equipment Welders Program
Laser Hazard Control Program
Vibration Analysis Program
Central Technical Publications Library
Taxi/Turnup/APU Licensing Program
Maintenance Department/Division Safety
SE Misuse/Abuse
Aircraft Confined Space Program
Gas Turbine Engine Test System Operator Training and Certification Program

NOTES: 1. The Weapons Department audits only those programs peculiar to that department.

2. While not all of the above listed are referred to as programs in this instruction, they shall be treated as such for audit purposes.

3. The EAF Division audits only those programs peculiar to that division.

10.7.4.3 Special audits provide a systematic, coordinated method of investigating suspected or known deficiencies in specific maintenance work centers, programs, or personnel. The QA Officer directs special audits as necessary. The CSEC question(s) asked during a special audit will be determined by QA.

10.8 Oil Consumption Program (NAMPSOP)

10.8.1 Introduction

The Oil Consumption Program establishes policy, responsibilities, and requirements for monitoring aircraft equipment condition in an effort to detect impending failures without equipment removal or extensive disassembly.

NOTE: Engines, gearboxes, and transmissions that have specific consumption rates per applicable MIMs/MRCs are required to comply with the requirements of this program. Gearboxes and transmissions that only have established leak limits, such as drops per minute, fall outside the scope of this program.

10.8.2 Discussion

10.8.2.1 The Oil Consumption Program provides Navy and Marine Corps O-level activities the guidance necessary to achieve required performance, efficiency, and logistic support by establishing policy for integrated oil consumption requirements. All aspects of oil consumption/servicing, documentation, and trend analysis are critical to flight safety.

10.8.2.2 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.8.3 Responsibilities

10.8.3.1 Wing and O-Level Activities

10.8.3.1.1 The Wings shall:

- a. Develop local command procedures (as required) per [Appendix D](#) to identify the T/M/S, geographic environmental, and local legal peculiarities.
- b. Monitor oil consumption requirements and provide a standardized method for Maintenance Control to ensure oil consumption limits are not exceeded prior to release of aircraft safe for flight.
- c. Develop T/M/S Oil Consumption Program CSEC questions.

10.8.3.1.2 The MO shall:

- a. Designate, in writing via the MMP, the MMCO as the Oil Consumption Program Manager.
- b. Develop local command procedures (as required) per [Appendix D](#).
- c. Coordinate with the NATOPS Officer to ensure all pilots/aircrew are trained in oil consumption documentation procedures while operating away from home base.

10.8.3.1.3 The Program Manager shall:

NOTE: A) Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be knowledgeable of applicable MIMs, MRCs, and this instruction.
- b. Provide indoctrination and follow-on training to personnel relating to their Oil Consumption Program responsibilities.
- c. Maintain a program file to include applicable POCs, program related correspondence and message traffic, and applicable references or cross reference locator sheets.

d. Use CSEC information and reports (provided by the Program Monitor) to identify specific areas of concern and to determine steps required for program/process improvement.

e. Ensure grade and quantity of oil added to each engine is annotated in block 6 of the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) per this instruction. Block 8 may be used to document gearbox oil, hydraulic fluid quantity, or other aircraft servicing information.

f. Ensure aircraft releasing authorities verify oil consumption limits have not been exceeded, per applicable MIMs/MRCs, prior to releasing aircraft safe for flight.

g. Ensure personnel assigned duties of servicing engines and gearboxes are trained on proper servicing techniques and documentation requirements.

h. Ensure safe for flight certified personnel receive adverse oil consumption values/trends certification training as part of the qualification procedures for certification.

i. Ensure oil consumption rates are calculated and documented prior to releasing aircraft safe for flight.

j. Ensure **R}** the current Engine/Gearbox Oil Consumption Record (Figure 10.8-1) is retained in the ADB until completed. Completed forms shall be placed with the applicable AESR and accompany the aircraft/engine when transferred. Gearbox oil consumption records can be disposed of locally after gearbox transfer. Figure 10.8-1 is a sample format. Commands are authorized to deviate from this format for unit specialization, ensuring required data elements are met.

NOTE: R} The Engine/Gearbox Oil Consumption Record, ADB, and AESR oil consumption requirements are optional for engines capable of electronic oil consumption monitoring, for example, the C-130 AE2100D3 Turboprop Engine.

k. Ensure appropriate action, per applicable MIMs, is taken when any consumption value or increase in consumption value exceeds the authorized limits.

l. Ensure all pilots/aircrew taking aircraft on cross-country evolutions have been briefed on oil consumption/servicing procedures and responsibilities.

10.8.3.1.4 The QA Officer shall designate, in writing via the MMP, a QAR as the Oil Consumption Program Monitor. This assignment does not preclude other QARs from monitoring this program but places the overall responsibility with one individual.

10.8.3.1.5 The Program Monitor shall:

a. Perform audits using CSEC per paragraph 10.7.

b. Assist in preparing **R}** DRs.

c. Screen oil consumption records weekly for completeness and accuracy with particular attention paid to abnormal trends and values that fall outside the authorized consumption limits.

10.8.3.1.6 Maintenance Control shall ensure:

a. Oil consumption rates are calculated and documented for engines/gearboxes prior to releasing aircraft safe for flight.

b. An Engine/Gearbox Oil Consumption Record (Figure 10.8-1) is retained in the ADB until completed. Completed forms shall be placed with the applicable AESR and accompany the aircraft/engine when transferred. Gearbox oil consumption records can be disposed of locally after gearbox transfer.

10.8.3.1.7 The Work Center Supervisor shall:

- a. Ensure Oil Consumption Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record.
- b. Ensure oil servicing units are maintained free of contamination.
- c. Conduct oil servicing per applicable MIMs/MRCs.

NOTE: Servicing personnel shall inform Maintenance Control and document on Engine/Gearbox Oil Consumption Record (Figure 10.8-1) how many ounces of oil were added to aircraft engines/gearboxes.

10.8.3.1.8 Aircrew shall:

- a. Be thoroughly familiar with oil servicing procedures.
- b. Ensure oil consumption rates are calculated and documented on the Engine/Gearbox Oil Consumption Record (Figure 10.8-1) prior to flight.

10.8.3.2 Fleet Readiness Center (FRC)

FRCs shall:

- a. Develop local command procedures (as required) per Appendix D to identify the T/M/S, geographic environmental, and local legal peculiarities.
- b. Monitor oil consumption requirements and provide a standardized method for Maintenance Control to ensure oil consumption limits are not exceeded prior to release of aircraft safe for flight.
- c. Ensure all pilots/aircrew are trained in oil consumption documentation procedures while operating away from home base.
- d. Ensure command personnel are knowledgeable of applicable MIMs, MRCs, and this instruction (as appropriate).
- e. Review audit data and other program related reports (generated within the command) to identify specific areas of concern and to determine steps required for program/process improvement.
- f. Ensure grade and quantity of oil added to each engine is annotated in block 6 of the Aircraft Inspection and Acceptance Record (OPNAV 4790/141) per this instruction. Block 8 may be used to document gearbox oil, hydraulic fluid quantity, or other aircraft servicing information.
- g. Ensure aircraft releasing authorities verify oil consumption limits have not been exceeded, per applicable MIMs/MRCs, prior to releasing aircraft safe for flight.

ENGINE/GEARBOX OIL CONSUMPTION RECORD

BUNO: _____ Engine/Gearbox S/N: _____ Engine Position (P/S): _____

Maximum Oil Consumption: $\frac{\text{_____}}{\text{(Engine/Gearbox)}}$ is $\frac{\text{_____}}{\text{(Quantity)}}$ oz per flight hour.

[illegible]

Completed records to be filed in the AESR manila envelope

Figure 10.8-1: Engine/Gearbox Oil Consumption Record (Sample)

10.9 Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) (NAMPSOP)

10.9.1 Introduction

10.9.1.1 NAMDRP establishes policy, responsibilities, and requirements for reporting substandard workmanship, improper QA procedures, and deficiencies in material and publications.

10.9.1.2 References:

- a. OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions.
- b. OPNAVINST 3750.6, Naval Aviation Safety Program.
- c. OPNAVINST 4410.2, Joint Regulation Governing the Use and Application of Uniform Source Maintenance and Recoverability Codes.
- d. OPNAVINST 5102.1, Mishap Investigation and Reporting.
- e. OPNAVINST 5442.2, Aircraft Inventory Reporting System (AIRS).
- f. OPNAVINST 8000.16, The Naval Ordnance Maintenance Management Program (NOMMP).
- g. SECNAVINST 4140.2, Management of Aviation Critical Safety Items.
- h. SECNAVINST 4355.18, Reporting of Supply Discrepancies
- i. SECNAVINST 4855.3, Product Data Reporting and Evaluation Program (PDREP).
- j. NAVAIRINST 4700.22, Policy for Managing Lead Maintenance Technology Centers.
- k. NAVAIRINST 5100.11, Research and Engineering Technical Review of Risk Process and Procedures for Processing Grounding Bulletins.
- l. NAVSUPINST 4423.29, Navy Uniform Source, Maintenance and Recoverability (SMR) Codes.
- m. NAVAIRINST 5216.11, Red Stripe Memorandum System.
- n. DOD 4500.9-R, The Defense Transportation Regulation, Part II - Cargo Movement.
- o. NAVSUP Publication 485, Afloat Supply Procedures.
- p. NAVSUP Publication 719, Guide for Assignment, Application and Use of Source Maintenance and Recoverability Codes.
- q. NAVSUP Publication 723, Navy Inventory Integrity Procedures.

10.9.2 Discussion

10.9.2.1 A} Safety shall be the primary consideration when submitting reports. All hands are charged with the responsibility of reporting deficiencies, defects, and discrepancies which could adversely affect safety of operations. Mishaps can be prevented by making others aware of hazards.

10.9.2.2 NAMDRP reports consist of HMRs, EIs, HMR/EIs, PQDRs (CAT I and II), AIDRs, TPDRs (CAT 1, 2, 3 and 4), and BTRs. If a DR meets the criteria for an HMR and warrants an EI, it should be submitted as an HMR/EI.

10.9.2.3 Exceptions to R} DRs are:

- a. Changes/corrections to aircraft NATOPS or tactical manuals are reported per OPNAVINST 3710.7.
- b. Deficiencies resulting from incorrect packaging, preservation, marking, handling (as reported by supply activities), or deficiencies in shipment which are the result of overage, shortage, expired shelf life, or misidentified material are reported per NAVSUP Publication 723 or NAVSUPINST 4423.29.
- c. Locally procured material found to be deficient by the buyer is reported per SECNAVINST 4855.3.
- d. Deficiencies in letter type instructions and notices are reported by letter to the sponsor.
- e. SM&R code change recommendations are submitted per NAVSUP Publication 719.
- f. Recommendations for improvements in procedures which do not result from incorrect information contained in publications are reported by letter to the ISSC/LMTC.
- g. Transportation type discrepancies, for example, shortage, loss, or damage in transit, are reported under DOD 4500.9-R using the Transportation Discrepancy Report (SF 361).
- h. Packaging and shipment type discrepancies, for example, misdirected material, supply documentation, or packaging discrepancies attributable to shipper error, are reported under R} NAVSUP Publication 723.
- i. NALCOMIS publication deficiencies are reported using trouble report/change proposal procedures per OMA-SAM.
- j. Explosive incidents, dangerous defects, and malfunctions or failures involving explosive systems, launch devices, and AWSE are reported per OPNAVINST 5102.1 as an EER or a CODR. These reports are monitored under NAMDRP A} via AWIS (<https://awis.navair.navy.mil/awis>).
- k. A} FMS items under the International Logistics Program, after conveyance of title, are reported under SECNAVINST 4355.18 using the Supply Discrepancy Report (SF 364).

NOTE: R} JDRS shall not be used to recall quality deficient components. The TD Program shall be the means to facilitate the recall/inspection of quality deficient components per NAVAIRINST 5215.12.

10.9.2.4 The NAMDRP R} supports the NAVRIIP performance improvement requirements to achieve and continually improve aviation material readiness and safety standards with optimum use of manpower, material and funds. In agreement with this philosophy, the ISSC can perform EIs of aeronautical equipment or material at any maintenance level whenever contributions to safety, reliability, availability, readiness, performance, or economy can be realized. Mutually supporting teamwork and coordination between the ISSC and the OMA and IMA/FRC QAs for component failure validation will improve the quality of NAMDRP reporting.

10.9.3 Responsibilities

10.9.3.1 O-Level and I-Level Maintenance Activities/Fleet Readiness Center (FRC)

10.9.3.1.1 R} The MO/FRC equivalent officer shall:

- a. Enroll in JDRS (<https://jdrs.mil>) as a DR submitter (Approve and Submit web site DRs -- Message Release Authority) to ensure the MO/FRC equivalent receives all correspondence pertaining to the unit's DRs.
- b. Review and approve NAMDRP DRs.
- c. Review JDRS technical dialog pertaining to the unit's DRs.
- d. Ensure an adequate number of DR submitters (Approve and Submit web site deficiency reports -- Message Release Authority) (if delegated) and DR drafters (draft only), are enrolled to facilitate NAMDRP.
- e. Delegate, when necessary, their submitter privileges to the AMO, QAO, or NAMDRP Program Manager.
- f. Ensure required reports are submitted within specified timeframes.

10.9.3.1.2 R} The QA Officer shall:

- a. Enroll in JDRS (<https://jdrs.mil>) as a DR Submitter (Approve and Submit web site DRs -- Message Release Authority) (if delegated).
- b. Designate, in writing via the MMP, a NAMDRP Program Manager.

NOTE: For continuity, recommend that the NAMDRP Program Manager be assigned for a minimum of 12 months.

- c. Ensure required reports are properly drafted and submitted within specified timeframes.
- d. Review NAMDRP CSEC audits and direct corrective actions for process improvement.
- e. Ensure the ASO reviews all correspondence relating to aviation ground, flight, flight related, and explosive mishaps.
- f. Assist in preparing DRs.

10.9.3.1.3 R} The Program Manager shall:

NOTE: Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be knowledgeable of OPNAVINST 3710.7, NAVSUP Publication 723, NAVSUPINST 4423.29, DOD 4500.9-R, OPNAVINST 8000.16, OPNAVINST 4410.2, OPNAVINST 3750.6, OPNAVINST 5102.1, SECNAVINST 4855.3, NAVAIRINST 4700.22, NAVSUP Publication 484, and this instruction.
- b. Perform NAMDRP self evaluation audits using CSEC.
- c. Assist work centers in determining which reports are needed. Review all DRs to ensure they are accurate, clear, concise, and comprehensive.

- d. Review all reports to determine discrepancy trends.
- e. Assist work centers and the HMC&M Supervisor in preparing environmental and NAMDRP DRs.
- f. Assist QA in screening all DRs, including those dealing with environmental issues, to ensure they are accurate, clear, concise, and comprehensive.
- g. Maintain a program file to include:
 - (1) Applicable POCs.
 - (2) Outgoing DRs for the past year or until final ISSC/LMTC response (closing action) is received, whichever is greater.
 - (3) ISSC/LMTC/manufacture responses for 1 year or until final ISSC/LMTC/manufacture response (closing action) is received, whichever is greater.
 - (4) Follow-up NAMDRP messages/correspondence and JDRS technical dialogs.

NOTE: DRs and technical dialog correspondence stored on JDRS do not require hard copy files.

- (5) Applicable references or cross reference locator sheets.
- h. Keep an RCN log to ensure DRs, including EERs and CODRS, are assigned unique RCNs.
- i. Initiate JDRS technical dialog correspondence to the ISSC/Quality Team when:
 - (1) DR responses have not been received within prescribed timeframes ([paragraph 10.9.3.2](#)).
 - (2) Shipping instructions have not been released within 20 days of DR submission.
 - (3) DRs do not meet this instruction's metric requirements ([Figures 10.9-1, 10.9-2, and 10.9-3](#)).
- j. Provide unit users with JDRS training (as necessary).

NOTE: Web site tool handbooks are available under the JDRS Help Menu, "Handbooks" link to assist users with tool operation.

- k. Audit the unit users enrolled in JDRS on a monthly basis, for example, identifying users who have transferred or no longer require access, and provide feedback via the Contact Us tool to update, delete, or change unit personnel profiles.
- l. Ensure an adequate number of web site Drafters/Submitters are enrolled within the unit to initiate and submit DRs via JDRS.

10.9.3.1.4 **R** Division officers and work center supervisors shall:

- a. Draft DRs and submit to QA (when required).
- b. Ensure NAMDRP indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.9-4](#)) in the individual's qualification/certification record.

10.9.3.2 In-Service Support Center (ISSC)/Fleet Readiness Center (FRC)

The ISSC/LMTC, Quality Team, or Cognizant screening point is required to respond to **R} DRs**, via the JDRS (<https://jdrs.mil>) Acknowledge Receipt tool, within the following time frames:

- a. One working day after receipt of an HMR, HMR/EI, CAT I PQDR or CAT I TPDR.
- b. Three working days after receipt of an EI, CAT II PQDR or AIDR.
- c. Thirty days receipt of a CAT 2, 3 or 4 TPDR.

NOTES: 1. Acknowledging receipt of a **R} DR** is considered a response.

2. DRs submitted via CPIMS shall be imported into **R} JDRS upon receipt by the ISSC or Quality Team. The ISSC or Quality Team shall make every effort to acknowledge the DR** within this instruction's time frames.

10.9.3.3 Engineering ISSC Responsibilities for Processing HMR, EI, HMR/EI and CAT I and II PQDR Reports

10.9.3.3.1 **R}** The ISSC is responsible for processing HMRS, EIs, and HMR/EIs for assigned material. Activities responsible for investigations shall take action on EI requests per requirements of the COMNAVAIRSYSCOM (AIR-4.0) EI process. These requirements, at a minimum, shall include the following:

a. Examine the EI or HMR request to determine if the DR was sent to the correct ISSC/LMTC. If not, readdress the request to the correct ISSC/LMTC, via **R} JDRS** (<https://jdrs.mil>) Acknowledge Receipt tool, for action and inform the originator of the action taken. If the correct ISSC cannot be identified, forward the report to the JDRS Clearinghouse, via the JDRS Acknowledge Receipt tool for action and forwarding.

NOTE: Immediate Acknowledge/Forward action must be taken to ensure the correct ISSC/LMTC completes the Acknowledge Receipt process within the time constraint per this instruction.

- b. Import EI or HMR reports submitted by CPIMS into the **R} JDRS** web site upon receipt.
- c. Conduct liaison with the report originator (as required) to obtain amplifying/clarifying information on the reported discrepancy/failure.
- d. Study the history of failures to determine the need for and value of an investigation on the equipment/material in question.
- e. Confirm the criticality (CSI, CAI, or noncritical) of the discrepant item or establish the criticality if a determination had not previously been made. Every EI, HMR, HMR/EI, and PQDR processed through **R} JDRS** contains a link by which criticality determinations or recommendations can be submitted to appropriate Critical Item Managers. This facilitates updating the official critical item database to better ensure the DOD community is aware of and responsive to issues relating to critical parts.
- f. Close EI reports via a Closing Report when an investigation will not be conducted. Close HMR reports via an HMR response when an investigation will not be conducted.

NOTE: Ensure the Supply Department or unit holding the material is included as an action addressee within the Closing Report or HMR Response and provide instructions stating the material will not be required for investigation and may be released for repair via normal supply channels.

g. For EIs, and HMR reports being turned into an HMR/EI, complete the R}JDRS website Go/No Go tool to determine the engineering risk, cost analysis, or other factors that indicate whether an EI is required or not. The ISSC engineer shall use the Technical Dialog tool to communicate with the report originator or other POCs when additional information is required.

NOTE: The ISSC engineer shall summarize the factors that led to a decision when an investigation will not be conducted via the web site Closing Report or Reclassification.

h. When it is determined an investigation is required, assign an ICN and provide shipping instructions, via the R}JDRS Preliminary Disposition Report, for the discrepant equipment/material or describe the arrangements for an on site investigation. All EI exhibits shall be shipped as directed by the shipping instructions (Preliminary Disposition Report).

i. Use the EI request/PQDR investigation control system, for example, WC3EI-AV8-0001-04S, for deriving ICNs per the following:

(1) The first three elements of the ICN shall be the FRC identifier (Organization Code), as established in the Organization Code Listing (A7065-01), R} for example, WC2 – FRC East.

(2) The next elements shall be "EI" or "PQDR". The following element shall be a dash (-).

(3) The next two, three, or four elements shall be the system identifier, for example, F-4, T400, ACCY, ELEC, AVNC. (PQDR only: Investigative quality organization may be used vice system identifier). The following element shall be a dash (-).

(4) The next four elements are a sequentially assigned number. The numbers start with "0001" for the first assigned EI/PQDR in a new calendar year. The following element shall be a dash (-).

(5) The next two elements shall be the calendar year identifier, beginning with "07" for calendar 2007, and continuing in arithmetic progression with changes in calendar year.

(6) The last element shall be a request urgency indicator, that is, "R" for Routine, "S" for Safety, and "M" for Mishap related. This indicator shall be based on the nature of the request as specified in the R} DR.

j. Develop an EI Exhibit Examination Plan via R}JDRS. Ensure the examination plan is provided to the investigating activity and customer service team. Notify local investigating activity receiving personnel of the request for the equipment/material exhibit so the exhibit can be properly identified and routed when received.

k. Follow-up on equipment/material non-receipt. Under normal circumstances, follow-up shall be made within 4 R} working days for CONUS (8 working days for outside CONUS shipping) days after the response message, but the period may be extended if it is known that shipment will take longer than 20 calendar days. Follow-up shall include a JDRS Tracer Request to the EI request originator and supply activity responsible for shipping the material. Checks shall also be conducted with the local supply activity, Customer Service Team charged with receiving the material, site delivery points, and Repair Receiving Points to ensure the material is delivered to the correct destination.

NOTE: All possible follow-up actions shall be taken, particularly on equipment/material related to HMRS, and aircraft mishaps.

l. Conduct or arrange for the accomplishment of the EI. EIs in support of aircraft mishaps shall be assigned priority 1. HMR/EI investigations shall be assigned priority 1 or priority 2 depending on the ISSC's/LMTC's assessment of the probable impact or effect of the reported problem.

NOTE: Originator's recommended or requested priority must be given serious consideration.

m. If completion of an EI requires assistance from another ISSC/LMTC, request assistance directly from that ISSC/LMTC with an information copy to the PMA and COMNAVAIRFOR (N442). If the investigation must be accomplished by another Navy technical activity or a contractor, forward a letter or message to the appropriate COMNAVAIRSYSCOM program office requesting assistance. In either case, the report originator shall be officially notified of the change in action points and provided with new contact points. Any Navy activity or contractor performing an EI shall submit a report of findings, conclusions, and recommendations to the ISSC/LMTC only. The ISSC/LMTC shall review/amend the report, and then issue a final report/closing action.

n. Provided interim message reports on EIs related to aircraft mishaps or priority 1 HMRs within 10 working days of receipt/induction of the exhibit, with a final report following within 20 working days of the Preliminary Disposition Report. Reports on all other investigations shall be provided within 30 working days of receipt/induction of exhibit.

o. For all other HMRs and EIs, the final reply shall be provided within 45 R} working days after receipt of exhibit. If the investigation exceeds the 45 calendar days, an interim report shall be submitted.

p. Return, or provide for the return of, the unserviceable equipment or material to the CST for disposition. Use the web site Material Disposition tool to inform the CST of the Condition of the Material and disposition direction. Serviceable RFI material shall be certified as such and applicable documentation (RFI Tag, etc.) shall accompany the component. If the equipment or material is extensively disassembled and salvageable, it may be inducted for rework and should be entered into the Supply System inventory under the proper condition code. In the case of EIs in support of mishap investigations, no disposition of the equipment/material shall be made until released by the senior member of the AMB per OPNAVINST 3750.6.

NOTE: Mishap material shall be managed and maintained by the cognizant ISSC. It is the responsibility of the Engineering Team to conduct follow up actions or disposition requests to the AMB. Once the AMB approves the disposition of AMB material, the Engineering ISSC shall contact the R} JDRS Clearinghouse for workflow assistance to reopen the DRs Disposition tool. The ISSC will then dispose of the material, via normal Material Disposition means. The CST shall return the material from "L" condition to "A", "F" or "H" and process accordingly.

10.9.3.3.2 The ISSC/LMTC shall take action on all EI requests. The ISSC/LMTC may request assistance in accomplishing an EI or initiate an EI within the ISSC/LMTC organization when a problem is suspected that has not been reported.

10.9.3.3.3 If the ISSC/LMTC is unable to accomplish an EI because of equipment/facility limitations, specialized engineering discipline requirements, or other reason(s), the ISSC/LMTC shall request assistance from an appropriate Navy technical activity or contractor establishment. Assistance from other ISSCs/LMTCs shall be requested by message with an information copy to the PMA and COMNAVAIRSYSCOM. Assistance from other Navy technical activities or contractors shall be requested by the ISSC/LMTC to the appropriate COMNAVAIRSYSCOM code (Figure 10.9-5). When contractor assistance is required and a support contract exists, request for assistance may be made directly to the appropriate ACO by message. Approval by the PMA is required prior to obligating funds for any contractor assistance services.

10.9.3.3.4 The support activity is any activity having the responsibility for shipping/receiving EI related material. When requested, supply support activities shall ensure the material has been prepared properly for shipment and shipped to the ISSC/LMTC using the R} JDRS Shipping tool. Customer Service Support activities receiving material are responsible for completing the R} JDRS exhibit receipt tool, maintaining identification of the material, and expeditiously forwarding the material to the ISSC/LMTC.

10.9.3.3.5 Per OPNAVINST 3750.6, the NAVSAFECEN may provide a representative to assist an AMB, and in certain special cases, conduct an independent safety investigation. As a direct representative of the CNO, this investigating officer shall control the material undergoing EI until released to the AMB. The NAVSAFECEN investigator shall be accorded full information, cooperation, and the use of facilities necessary for proper discharge of the assignment.

10.9.3.3.6 The ISSC shall:

- a. Evaluate all incoming PQDRs to validate urgency, action required, and category.
- b. Send a technical dialog to the quality team, confirming CAT I PQDR category/risk. CAT I closing/final reports shall also be evaluated by the ISSC to ensure safety/mission impact issues have been properly addressed.
- c. Send a technical dialog to the quality team for CAT II PQDRs having safety impact or mission impairment, requiring reclassification as a CAT I PQDR.
- d. Send a technical dialog to the quality team for CAT I PQDRs which have been assessed as having no impact on safety or mission impairment.

NOTE: Assigned ISSC personnel shall be mapped in the RJ JDRS web site ISSC look-up Quality POC section to receive submitted PQDRs via email.

- e. Comply with the EI process timeline per [Figure 10.9-1](#).
- f. Initiate PQDRs during an EI, HMR, HMR/EI investigation when it is discovered that the failure was the result of poor quality.
- g. Follow PQDR submission guidelines within this instruction when reporting PQDRs.

10.9.3.3.7 The FRC Quality Organization shall:

- a. Serve as the focal point for coordinating the internal effort to ensure internally and externally generated PQDRs are processed, investigated, and responded to within the established time frames of this instruction.
- b. Ensure changes and revisions to PQDR procedures receive the support necessary to effect their timely implementation.
- c. Ensure adequate and timely processing and closing action on all PQDRs for assigned material.
- d. Effect the necessary review and follow-up to ensure deficiencies reported on assigned material are receiving appropriate attention.
- e. Maintain and provide PQDR trend analysis data. Sources of quality deficient data may be identified using:
 - (1) FRC or civilian contractor's quality organization internal accumulated data method.
 - (2) Aviation 3M MDS using the aircraft or component WUC and When Discovered Code, for example, Code Y for defective upon receipt or withdrawal from Supply.
- f. Provide information concerning repetitive or similar defects on like items to benefit action points in investigation and resolution of problems.

g. Keep and maintain an RCN log to ensure all D-level and ISSC generated NAMDRP R}DRs are assigned unique RCNs.

10.9.3.3.8 The PQDR Quality Team Screening Point shall:

a. Examine the PQDR request to determine if the DR has been sent to the correct Quality Team/Screening Point. If not, readdress the request to the correct Quality Team/Screening Point, via the R}JDRS (<https://jdrs.mil>) Acknowledge Receipt tool, for action and inform the originator of the action taken. If the correct ISSC cannot be identified, forward the report to the JDRS Clearinghouse, via the JDRS Acknowledge Receipt tool for action.

NOTE: Immediate Acknowledge/Forward action must be taken to ensure the correct ISSC/LMTC completes the Acknowledge Receipt process within this instruction's time constraints.

b. Evaluate all incoming and outgoing PQDRs to determine urgency, action required, and category, using R}JDRS. When incomplete or incorrect areas are noted, obtain the necessary information by contacting the originator, make the necessary changes, and complete the required processing as follows:

- (1) Import PQDRs received by the FRCs via CPIMS message into R}JDRS upon receipt.
- (2) Complete the R}JDRS Data Review tool to ensure accurate information has been received from the originator via the JDRS Technical Dialog tool. When incomplete or incorrect areas are noted, obtain the necessary information by contacting the originator, make the necessary changes via the Data Review tool, and complete the required JDRS processing.
- (3) Determine if the PQDR category (CAT I or CAT II) assigned by the originator is properly assigned. Using the Data Review tool, the Screening Point may make necessary changes in category assignment but shall notify and provide justification to the originator via the R}JDRS Technical Dialog tool of these changes within 5 working days of the date of change.
- (4) Provide an immediate reply, via the R}JDRS Technical Dialog tool, to other participating components (to include engineering ISSC) and activities when the report concerns safety in peculiar and common use items.
- (5) Determine (where possible) if a contract warranty applies or initiates any special actions required. When the deficiency involves an item covered under a reliability improvement warranty, the PQDR shall be processed per SECNAVINST 4855.3 (unless a Warranty Clause governs this workload).
- (6) Identify material processed or reworked by another service component, such as Army or Air Force. Send the original PQDR to the inter-service action point via the R}JDRS Data Review tool. Provide the originator a copy of the request/transmittal and an information copy to COMNAVAIRSYSCOM (AIR-4.1.9). This accomplishes further processing as necessary.
- (7) Forward PQDRs, via R}JDRS, to COMNAVAIRSYSCOM (AIR-4.9.1) when the screening point is unknown.
- (8) Forward PQDRs to the appropriate Action Point, via R}JDRS, within the following time frames:
 - (a) CAT I PQDR within 1 working day after Acknowledge Receipt.
 - (b) CAT II PQDR within 10 working days after Acknowledge Receipt.

10.9.3.3.9 The PQDR Quality Team Action Point shall:

- a. Ensure the interim or final reply does not exceed 28 calendar days for CAT I PQDRs not requiring exhibits or R} 45 calendar days after receipt of exhibit for CAT I PQDRs with exhibits.
- b. Ensure the interim or final reply does not exceed 45 calendar days for CAT II PQDRs not requiring exhibits or R} 60 calendar days after receipt of exhibit for CAT II PQDRs with exhibits.
- c. Complete the R} JDRS Shipping Instructions to provide disposition instructions to the Supply Activity holding the PQDR exhibit.
- d. Ensure delivery of the exhibit or sample requested (if needed) from the holding activity and the follow-up of equipment or material non-receipt. Under normal circumstances follow-up (Tracer Request) via R} JDRS, shall be made 20 days after Preliminary Disposition Report release, but the period may be extended if it is known that shipment will take longer than 20 days. At a minimum, the tracer request shall include action addressees to the PQDR originator, the supply activity holding the exhibit, and the Customer Service Team responsible for receipt of the exhibit.
- e. Ensure follow-up action is taken on equipment/material related to safety.
- f. Determine if the deficiency has been previously reported.
- g. Determine if the previously reported deficiency is under investigation or has been resolved.
- h. Notify the originator, within the time frames previously outlined, that the problem is either under investigation or has been previously resolved.
- i. Determine if a quality investigation should be conducted, what action will prevent recurrence, and what reports of findings will be required from affected support points. Provide affected support points with action copies stating desired support.
- j. Initiate appropriate action on CAT I PQDRs to inform other activities (to include engineering ISSCs), that may have received material with similar defects, of the defect and identify specific lot shipment suspected.
- k. Initiate appropriate action to the ICP or PCO/ACO which could preclude further procurement or acceptance of deficient material. The ICP and PCO/ACO shall request distribution activities inspect or screen their stock and issue ALERT notifications (when needed).
- l. Provide an immediate reply, via the R} JDRS Technical Dialog tool, to other participating components (to include engineering ISSCs) and activities when the report concerns safety in peculiar or common use items.
- m. Determine, where possible, if a contract warranty applies and initiate any special actions required. When the deficiency involves an item covered under a reliability improvement warranty, the PQDR shall be processed for information only per SECNAVINST 4855.3.
- n. Determine if the PQDR category is properly assigned, make necessary changes in category assignment, and notify the originator, via R} JDRS, of these changes within 5 working days of the date of change.
- o. Ensure CAT I Final Reports are reviewed by the Engineering ISSC; The Quality Team shall send their Final Draft, via the R} JDRS Technical Dialog tool, allowing the engineering team 24 hours to provide any comments and or changes.

- p. Adhere to the PQDR process timeline per [Figure 10.9-2](#).

10.9.3.3.10 The PQDR Support Point shall:

- a. Assist the Action Point, when requested, under the established time frames specified in this instruction.
- b. Furnish report of findings as requested by the Action Point.
- c. Receive DRs from across component lines (source of supply action point) for appropriate action.
- d. Return, or provide for the return of, the equipment and material to the supply system after completing the investigation unless otherwise directed or unless the material or equipment is beyond salvage. The equipment or material may be inducted for rework if the item is extensively disassembled and salvageable. In the case of CAT I PQDR in support of mishap investigations, no disposition of the equipment/material shall be made until released by the senior member of the AMB per OPNAVINST 3750.6.
- e. R} Provide an information copy of PQDRs and subsequent correspondence to COMNAVAIRSYSCOM (AIR-4.1.9) and COMNAVAIRSYSCOM (AIR-6.0) for organic and commercially reworked aircraft and related components.

10.9.3.3.11 COMNAVAIRSYSCOM (AIR-4.1) shall:

- a. Serve as the PQDR administrator within COMNAVAIRSYSCOM by establishing and overseeing the implementation of the policy and guidelines to manage the overall PQDR process.
- b. Act as the screening point for PQDRs when the ISSC/LMTC cannot be determined or for commercial contracts administered by a COMNAVAIRSYSCOM PCO.

NOTE: For GFE material -- as acting screening/action point, send information copy to the PMA, ISSC, and FRC.

- c. Assists PQDR system users (when necessary).

10.9.3.3.12 ISSCs/LMTCs ensure prompt corrective actions are taken by the LRA for all reported material deficiencies.

10.9.3.3.13 LRAs investigate and take corrective action on all reported material deficiencies within the scope of their authority. The LRA is further required to report on corrective actions. Response shall be the same method as submitted by the originator, via R} JDRS (<https://jdrs.mil>), and will require the same precedence. ISSCs/LMTCs and LRAs shall appoint a quality organization person to serve as PQDR representative.

10.9.3.3.14 AIDR Screening Points are:

- a. The FRC for those aircraft reworked (organic) under their cognizance.
- b. COMNAVAIRSYSCOM (cognizant PMA) for aircraft manufactured/reworked under commercial contracts.
- c. The ISSC for aircraft reworked under DMISA.
- d. The cognizant government PCO for aircraft manufactured/reworked under commercial contract or inter-service agreement not administered by COMNAVAIRSYSCOM PCOs.

- e. NAVAIRPRA for those aircraft reworked under their cognizance.
- f. NAVAIRPRA for those aircraft reworked at FRCs/contractor facilities under their cognizance.

10.9.3.3.15 The AIDR Screening Point shall:

a. Examine the AIDR request to determine if the DR has been sent to the correct Quality Team/Screening Point. If not, readdress the request to the correct Quality Team/Screening Point, via the R} JDRS Acknowledge Receipt tool, for action and inform the originator of the action taken. If the correct ISSC cannot be identified, forward the report to the JDRS Clearinghouse, via the JDRS Acknowledge Receipt tool for action.

NOTE: Immediate Acknowledge/Forward action must be taken to ensure the correct ISSC/LMTC completes the Acknowledge Receipt process within this instructions time constraint.

b. Evaluate all incoming and outgoing AIDRs to determine urgency, action required, and category, using R} JDRS.

c. Complete the R} JDRS Data Review tool to ensure accurate information has been received from the originator. When incomplete or incorrect areas are noted, obtain the necessary information by contacting the originator, make the necessary changes via the Data Review tool, and complete the required JDRS processing.

d. Follow-up on AIDRs not received from the aircraft reporting custodian within 45 days after the aircraft is returned to the reporting custodians.

e. Review the AIDR report for accuracy, completeness, and validity.

f. Identify those discrepancies requiring a response from the Action Point.

g. Request the Action Point investigate those discrepancies identified by the Screening Point.

h. Review the Action Point's investigative report for completeness and validity.

i. Provide final response, via R} JDRS, on all reported AIDR discrepancies as soon as possible, but not later than 45 working days after receipt of the AIDR (30 working days for aircraft reworked at FRCs). Ensure the originator and all concerned activities receive a copy of the investigative report.

j. Review all AIDRs for compliance to D-level maintenance specifications.

k. Conduct the necessary follow-up action to reduce the possibility of like occurrences.

10.9.3.3.16 The AIDR Action Point shall:

a. Perform an investigation and address each deficiency as requested by the Screening Point.

b. Forward investigative results to the Screening Point.

c. Ensure corrective action is taken to preclude/minimize repetitive deficiencies.

NOTE: Some FRCs serve as both the screening and action points.

10.9.3.4 Exhibit Handling Procedures

10.9.3.4.1 It is NAMDRP policy to expeditiously resolve discrepancies while maintaining a high degree of spares availability. To achieve this goal, the shipment of EI, HMR or PQDR exhibits shall be accomplished using the premium shipping tool on R} JDRS (<https://jdrs.mil>). Under no circumstances shall EI, HMR or PQDR exhibits be shipped within the ATAC system. JDRS provides a means to ship HMR, EI, and PQDR exhibits via a commercial express shipping online API tool at no charge to the unit. When the express shipping tool is used, EI, HMR and PQDR exhibits can usually be delivered to the investigating activity within 3 working days CONUS and 7 working days outside CONUS. JDRS also provides the means to document shipments when the premium shipping tool is not needed. The COMNAVAIRSYSCOM JDRS Clearinghouse shall provide assistance in resolving web site shipping issues, overweight and oversized exhibits, connectivity issues, and waybill assistance, and can be reached at 1-888-832-5972 or by contacting the local Clearinghouse representative for assistance. Clearinghouse contact information is listed on the JDRS web site under the Help menu R} "Service Contacts" link. Assistance may also be requested through the JDRS "Contact Us" feature.

NOTE: All shipments shall be documented on R} JDRS, regardless of the method of shipment. This is to ensure the JDRS Material Management Branch and all POCs involved with the investigation are kept informed of the exhibits whereabouts for tracking purposes.

10.9.3.4.2 EI/HMR/PQDR Exhibit Preparation, Storage and Shipping. Several steps shall be performed prior to the exhibit being shipped to the investigation site. The QA Department shall prepare and handle all outgoing EI, HMR, and PQDR exhibits as follows:

NOTES: 1. It is imperative that the guidelines within this paragraph be followed to ensure that the exhibit is properly prepared for storage and subsequent shipment. The basis, or root cause of the failure of the EI, HMR or PQDR can only be verified if the ISSC/Quality Team receives the exhibit to carry out an investigation.

2. EI, HMR, and PQDR exhibits shall never be stored or shipped by activities other than the activity that was selected in Block 21A of the Deficiency Report.

a. Use photographic equipment to capture the condition of the exhibit when the deficiency is discovered. Digital pictures can be uploaded to the report during the submission process and to the Miscellaneous Attached Messages/Documents section of the report summary page once the report has been submitted.

b. Prior to packaging the exhibit, ensure all pertinent information is recorded to support and assist the report investigator. The RFI Tag (DD 1574) should be scanned or a digital photograph and uploaded/attached to the DR Submission. If after the fact, upload/attach to the Miscellaneous Attached Messages/Documents section of the report summary page. This will assist the report screener in determining and verifying the LRA. The contract number for which the exhibit was manufactured or repaired under shall be recorded and submitted in Block 10A of the DR. The contract number can be found on the Manufacturer's Invoice (DD Form 250) or on the Requisition and Invoice/Shipping Document (DD Form 1149). It may also be found on package markings or may be stamped/printed on the defective item or data plate. Use logistic tools, such as FedLog, to assist in determining the contract number.

c. Ensure the work center properly packages the material immediately upon removal from the system to prevent corrosion, contamination, or other damage that may contribute to loss of possible cause factors. Ensure that electrostatic discharge caps or tape is used on all exhibits that require it. Ensure that all fluid openings are capped or plugged to prevent contamination or loss of fluids during storage and transportation. Ensure that the work center does not adjust, disassemble, or perform any type of cleaning to the exhibit. If any adjustment, disassembly, or cleaning was done during a local investigation, a detailed description of the local investigation shall accompany the material to the ISSC, LMTC, or Quality Team.

d. Maintain material in an “as is” condition. Do not allow anyone to attempt to reassemble fragments of failed material. Ensure each fragment is wrapped separately to prevent damage caused by relative movement. When feasible, forward associated accessories, components, or material suspected of contributing to the malfunction or mishap.

e. Ensure the work center marks the copy of the MAF or Work Document with “EI”, “HMR”, or “PQDR” in 3-inch red letters in a manner not to obscure vital data prior to forwarding the defective material to the supporting Supply Department.

f. Ensure the work center annotates the RCN in the Work Document’s Discrepancy block and annotates BCM-8 and EI, HMR, or PQDR in the Corrective Action block.

NOTE: Consumables shall be treated as a DLR and placed in a BCM-8 status so the exhibit can be placed in Litigation “L” Code condition by the supporting Supply Department.

g. Attach the MAF or Work Document, copy of the PQDR, HMR, or EI request and shipping instructions (Preliminary A) Disposition Report) to the component or assembly. If the component or assembly has a SRC or EHR card, ensure the appropriate card accompanies the exhibit. Ensure all service records, for example, ASR, MSR, or AESR, have the appropriate logbook entries and are stored in the appropriate shipping container.

h. Forward fluid samples in a clean, sealed, and authorized container. If contamination is suspected, annotate the sample bottles accordingly.

i. Request special shipping instructions from the ISSC/LMTC if any hazardous conditions are evident.

10.9.3.4.3 In addition to paragraphs above, QA shall prepare and handle Aircraft Engine and Gas Turbine Compressor/Engine related EI and PQDR exhibits to ensure:

a. The engine container is marked with 3-inch red letters as an EI, HMR, or PQDR Exhibit.

b. The ETR is released to the Engine TYCOM and annotated per NAVAIRINST 13700.15 (DECKPLATE) with R} a Status Star code of 38-02 (EPSM awaiting EI or PQDR litigation).

c. The engine logbook has been annotated as being transferred for EI or PQDR investigation and place the engine logbook in the designated engine logbook container along with pertinent administrative forms (Chapter 5).

d. Turn in defective material to Supply, except for environmentally sensitive material which must be held in a HAZMAT storage area pending disposition instructions.

10.9.3.4.4 The supporting Supply Department shall hold the EI, HMR, and PQDR exhibit until shipping or disposition instructions (Preliminary Disposition Report) are received from the Action or Support Point. All EI, HMR, and PQDR exhibits shall be shipped per Action or Support Point shipping instructions (Preliminary Disposition Report). Those exhibits requiring premium shipping shall be shipped using the R} JDRS Premium Shipping tool.

NOTE: Material to be released to an authorized contractor’s representative or shipped directly to a contractor’s plant shall be processed through the supporting Supply Department. Supply may issue the material on a custody basis only after receiving authority from the ISSC/LMTC. DLR exhibits, sent to commercial contractors, shall be shipped as directed by the shipping instructions received from the Action or Support Point.

10.9.3.4.5 D}_____.

10.9.3.4.6 Exhibit Holding Point (supporting Supply Department/Center) shall:

- a. Hold the exhibit material until R} JDRS Preliminary Disposition Report instructions are received from the ISSC/LMTC or the directing authority.
- b. Ensure the exhibit is marked and packaged properly.
- c. Ensure all EI, HMR, and PQDR material is placed in Condition Code L.
- d. Quarantine and store all HMR, EI, and PQDR exhibits separately from material being processed under normal repair channels.
- e. R} Ensure an adequate number of personnel are enrolled in the JDRS web site, possessing user roles of Ship Exhibit and Ship Exhibit with Tracer.

NOTE: R} A request for Tracer Response can only be generated by the Originating Unit Submitter or Exhibit Holding Point personnel having Ship Exhibit with Tracer user roles within JDRS (message release authority).

f. If shipping instructions (Preliminary Disposition Report) have not been received from the ISSC or Quality Team within 20 R} working days of the EI or PQDR DR initial submission, send a Technical Dialog via JDRS and request the ISSC or Quality Team provide instructions. When connectivity prevents the use of a Technical Dialog, contact the JDRS Clearinghouse for assistance.

g. Use the R} JDRS premium shipping tool to accomplished shipment of HMR, EI, HMR/EI, or PQDR exhibits. Paragraph 10.9.3.4 provides Exhibit Handling Procedures.

NOTE: **All shipments shall be documented in the R} JDRS, regardless of the method of shipment. This is to ensure the Material Management Branch, and all POCs involved with the investigation, are kept informed of the exhibits whereabouts for tracking and or tracing.**

10.9.3.4.7 The Customer Service Team shall:

- a. Ensure ample R} JDRS Customer Service representatives are enrolled to support the program.
- b. Complete the R} JDRS Exhibit Receipt tool upon receipt of an HMR, EI, HMR/EI, or PQDR material per workload priority (Figure 10.9-6).

NOTE: **The R} JDRS Exhibit Receipt tool provides capability to receive exhibits where the shipment was not documented. The JDRS Exhibit Receipt tool remains live after record closure, to allow the Customer Service Team to document receipt and notify the POCs of exhibits that were assumed lost.**

- c. Ensure D-Level Repairable Carcass Tracking/TIR has been completed.
- d. Assist all POCs when tracing or tracking lost exhibits.
- e. Complete the Material Disposition tool upon receipt when the ISSC or Quality Team has completed their investigation and return the material from "L" condition and place back into supply per disposition instructions.
- f. Approve EI Exam Plans.

10.9.4 Hazardous Material Reports (HMRs)

10.9.4.1 HMRs provide a standard method for reporting material deficiencies which, if not corrected, could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities. Such incidents are reported regardless of how or when the discrepant condition was detected. Submitting an HMR does not alleviate the OPNAVINST 3750.6 requirement to submit a Hazard Report.

NOTES: 1. ISSC Cherry Point (AIR-4.1) shall have process ownership responsibilities for the HMR/EI Program.

2. R\}DRs and EERs are extremely important sources of hazard information. However these reports do not require chain of command endorsement and lack the visibility of an OPNAVINST 3750.6 hazard report. They also do not reach the same audience as aviation hazard reports since they do not use the OPNAVINST 3750.6 Collective Address System. The Naval Aviation Safety Program also requires endorsement or response by action agencies and tracking of corrective actions. When there are Safety of Flight or other significant safety issues, a hazard report is required by the OPNAVINST 3750.6 as well as to be reported under NAMDRP or via an EER for the same event. Commands are strongly urged to submit both (when appropriate).

3. For incidents where lack of training or improper training is a contributor to the HMR, the Center for Naval Aviation Technical Training, Pensacola, FL will be included in the info block of the HMR message. PLA: CENNAVAVNTECHTRA PENSACOLA FL.

10.9.4.2 Reports meeting the criteria for HMRs and warranting EI requests should be transmitted as dual message reports, for example, HMR/EI request.

10.9.4.3 Submit an HMR via R\}JDRS (<https://jdrs.mil>). When this is not accessible report by priority precedence message within 24 hours of discovery under any of the following conditions:

NOTES: 1. Exhibit Handling and preparation of Exhibit Material are in [paragraph 10.9.3.4](#).

2. Malfunction or failure of a component which, if not corrected, could result in death or injury to personnel, or damage to or loss of aircraft, equipment, or facilities. Submitting naval aircraft mishap reports required by OPNAVINST 3750.6 does not negate the requirements for submitting reports required by this instruction.

a. Configuration deficiency (when discovered) which constitutes a safety hazard in aeronautical equipment (aircraft, SE, or components).

b. Urgent action or assistance is required and corrective action must be completed at an early date because of operational requirement.

c. Detection of a design that would allow incorrect installation of parts resulting in possible system malfunction or failure.

d. In-flight or ground loss of aircraft parts in which maintenance or material factors are involved. TFOA is used when referring to such incidents. TFOA includes incidents generally categorized in other areas, such as a FODed engine which sheds parts or a helicopter rotor blade pocket failure.

NOTES: 1. TFOA related AAE parts or components shall be reported to the applicable platform ISSC via an HMR and reported to the applicable ordnance ISSC via a CODR.

2. AAE CODRs shall be submitted to the applicable ordnance ISSC per OPNAVINST 8000.16 and the Platform ISSC as an info addressee on the DR.

3. Exhibit Handling and preparation of Exhibit Material are in [paragraph 10.9.3.4](#).

10.9.5 Engineering Investigations (EIs)

10.9.5.1 EIs apply to all aircraft and weapon systems, subsystems, equipment, components, related SE, special tools, software, fluids, and materials used in equipment operation. EIs:

- a. Provide an investigation process to determine cause and depth of fleet-reported material failures.
- b. Support investigations of material associated with aircraft mishaps, lightning strikes, electromagnetic interference, and stray voltage problems.
- c. Provide for investigation of components rejected through the NOAP.
- d. Support SRC, ASR, EHR, and MSR programs by providing for investigation of high-time and on-condition components and assemblies to confirm, revise, or initiate component and assembly operating times.
- e. Provide engineering assistance for any fleet material problem.
- f. Support mandatory investigation requirements for activated aircraft escape systems in OPNAVINST 3750.6.

10.9.5.2 Submit EI requests under any of the following conditions when:

- a. Safety is involved. This includes EI requests prepared in conjunction with aircraft mishaps and HMRs when unsafe conditions exist.
- b. Additional technical or engineering information is required to complete an aircraft mishap investigation.
- c. Aircraft readiness is seriously impaired due to poor material reliability (including SE).
- d. A component is rejected through the NOAP after all authorized repairs are attempted.
- e. Environmental issues force material or process changes conflicting with existing publications or TDs.
- f. Directed by higher authority.

10.9.5.3 Submit an EI request via **R} JDRS** (<https://jdrs.mil>) within 5 working days ([Figure 10.9-1](#)) from the time the deficiency was discovered, unless combined with an HMR, in which case the combined report follows HMR reporting criteria. When this is not accessible, report by routine precedence message ([Figure 10.9-7](#)) within 5 working days from the time the deficiency was discovered, unless combined with an HMR, in which case the combined report follows HMR reporting criteria. Ensure the supporting Supply Department and, for DLRs, the DSP are information addressees.

NOTE: Exhibit Handling and preparation of Exhibit Material are in [paragraph 10.9.3.4](#).

10.9.6 Product Quality Deficiency Reports (PQDRs)

10.9.6.1 PQDRs are used to report **R} product deficiencies attributable to the supplier, contractor, or rework facility through deficient material or manufacturing and substandard workmanship or rework. PQDRs apply to all new or newly reworked material, products, and software, which do not meet contractual or specification requirements. Deficiencies must have occurred at zero operating time, during initial installation, operation, test, check, turn-up, or first flight. This includes premature failure of items within an identified warranty period or specified level of performance. Deficiencies discovered after initial use shall be reported as EIs or HMRs (as appropriate). PQDRs are targeted toward reporting possible deficiencies in quality during the**

manufacturing or rework process. The PQDR process improves the quality of new and newly reworked material provided by FRC rework facilities, commercial rework facilities, OEMs, contractors, and subcontractors. SECNAVINST 4855.3 provides overarching policy guidance for the PQDR Program.

NOTES: 1. COMNAVAIRSYCOM (AIR 4.1) shall have process ownership responsibilities for the PQDR Program.

2. Do not submit PQDRs R} for material repaired by an IMA facility. This material shall be Y-coded and returned to Supply. IMAs inducting material with a When Discovered Code Y shall perform an investigation of the reported deficiency per Chapter 7.

3. NAMDRP requirements are applicable to material worked under a PBL/CLS contract.

4. A} Material damaged due to packaging, handling, storage, or transportation shall be reported via an SDR per NAVSUP Publication 723.

10.9.6.2 PQDRs may be initiated for warranty purposes only if specific direction (with COMNAVAIRFOR (N422) concurrence) is provided to the affected communities and documented in the Miscellaneous/History section of the logbook, record, or card.

10.9.6.3 New material is defined as material procured under contract from commercial or government sources or manufactured by an organic facility. It is considered new until it has been proven in actual operation. Reworked material is defined as material overhauled, rebuilt, repaired, or modified by a government or commercial activity but unproven in actual operation.

10.9.6.4 Warranted material will be considered new for PQDR reporting purposes by FRCs until the warranty expires.

10.9.6.5 CAT I PQDRs are used for all quality deficiencies which may cause death, injury, or severe occupational illness; would cause loss of or major damage to a weapons system; critically restricts the combat readiness capabilities of the using organization; or which would result in a production line stoppage. Discrepancies that potentially impact safety or a critical characteristic on a product identified as a CSI shall be categorized as a CAT I PQDR. Discrepancies on CSIs that do not impact safety shall be categorized as CAT II PQDRS.

10.9.6.5.1 CAT I PQDRs shall be submitted by routine precedence message, via R} JDRS (<https://jdrs.mil>), within 24 hours from the time the deficiency was discovered. When this is not accessible, report by priority precedence message ([Figure 10.9-7](#)) within 24 hours from the time the deficiency was discovered. A timeline is in [Figure 10.9-2](#).

10.9.6.5.2 Attach and include copies of all supporting documents to the R} JDRS PQDR web site submission. For example, DOD Single Line Item Requisition System Document (DD 1348-1A), Order for Supplies or Services (DD 1155), photographs, test reports, and other pertinent data. Ensure the PQDR RCN is on all documents. The following information is necessary for the Quality Team Screener to adequately process the PQDR. Failure to submit the following information may lead to record closure or loss of Charge Reversal Decision:

- a. RFI tag – Required to identify the Last LRA.
- b. Contract number – Necessary to identify the manufacturer.
- c. Turn-in document – Mandatory for DLR Charge Reversal.
- d. Requisition number – Mandatory for Consumable Charge Reversal.

10.9.6.5.3 [Paragraph 10.9.3.4](#) details handling and preparation of Exhibit.

10.9.6.5.4 PQDRs may be reported by telephone or in person when urgency dictates. Oral communication shall be confirmed by message.

10.9.6.5.5 The supporting Supply Department and DSPs (for DLRs) shall be the information addressees.

10.9.6.5.6 Do not combine CAT I PQDRs with EIs.

NOTE: FRC/ISSC activities (ISSC, Quality Teams and Strategic Business Offices) shall ensure contractors (who manufacture and or overhaul components under a PBL or CLS contract) adhere to COMNAVAIRSYSCOM'S NAMDRP PQDR Program requirements per this instruction.

10.9.6.6 CAT II PQDRs are used for quality deficiencies assessed to have significant and widespread material or human resource impact but do not affect safety of personnel or impair combat efficiency.

10.9.6.6.1 Submit CAT II PQDRs via **R} JDRS** (<https://jdrs.mil>) to the ISSC/LMTC within 5 working days from the time the deficiency was discovered. When this is not accessible report by routine precedence message ([Figure 10-9.7](#)) within 5 working days from the time the deficiency was discovered. A timeline is in ([Figure 10-9-2](#)).

NOTE: Activities experiencing difficulty connecting to JDRS shall submit CAT II PQDRs via naval message to the appropriate FRC PQDR Screening Point per [paragraph 10.9.8](#) and [Figure 10-9.7](#). Additionally, contact the JDRS Clearinghouse by email or phone (1-888-832-5972 or **R} 1-888-292-5919) to resolve web site issues.**

10.9.6.6.2 Attach and include copies of all supporting documents to the PQDR web site submission, for example, DOD Single Line Item Requisition System Document (DD 1348-1A), Order for Supplies or Services (DD 1155), photographs, test reports, and other pertinent data. Ensure the PQDR RCN is on all documents. The following information is necessary for the Quality Team Screener to adequately process the PQDR. Failure to submit the following information may lead to record closure or loss of Charge Reversal Decision:

- a. RFI tag – Required to identify the LRA.
- b. Contract number – Necessary to identify the manufacturer.
- c. Turn-in document – Mandatory for DLR Charge Reversal.
- d. Requisition number – Mandatory for Consumable Charge Reversal.

10.9.6.6.3 [Paragraphs 10.9.3.4](#) through [10.9.4.7](#) detail handling and preparation of Exhibit.

10.9.7 Acceptance Inspection Deficiency Report (AIDR)

10.9.7.1 The AIDR identifies/documents defects in newly manufactured, modified, or reworked aircraft, including aircraft that have completed PMI, to ensure better quality maintenance and rework procedures.

NOTE: COMFRC R} Policy and Compliance Department shall have process ownership responsibilities for the AIDR Program.

10.9.7.1.1 For aircraft reworked by FRC, submit the AIDR to the Organic Screening (NAVAIR Reworked) via the **R} JDRS** (<https://jdrs.mil>) Support Team “ST” look-up tool.

10.9.7.1.2 For aircraft newly manufactured or modified by the prime manufacturer or aircraft commercially reworked: Submit the AIDR to Commercial Screening (New or Commercial Rework) via the R} JDRS Support Team "ST" look-up tool.

10.9.7.2 Clear descriptions of defects and corrective actions are necessary for the AIDR to be effective in initiating corrective or preventive action. Remarks must be of sufficient detail to identify the problem, the parts involved, and to permit objective analysis of each discrepancy.

NOTE: Equipment shortages, ferry or shipping damages, deterioration during pool storage, discrepancies not directly pertaining to the quality of rework or manufacture are or discrepancies not covered in the negotiated work package/rework specification not reported on an AIDR.

10.9.7.3 Submit an AIDR (to include negative responses) via R} JDRS within 5 working days ([Figure 10.9-3](#)) after completing acceptance or post D-level check flight or within 5 working days after acceptance post D-level inspection for any on-site D-level maintenance not requiring check flight. A supplemental AIDR, if any, must be submitted within 30 days of completion of the initial AIDR.

10.9.7.3.1 An acceptance or post-D-level inspection is performed and an FCF (if applicable) flown as soon as possible after the aircraft's return to the reporting custodian and prior to maintenance (other than required to complete the acceptance or post- D-level inspection). Only those discrepancies noted by the ferry pilot and those found during the acceptance or post- D-level inspection and check flight that can be attributed to the manufacture, modification, or rework process are on the initial AIDR.

NOTE: When documenting the discrepancies found during an acceptance inspection where the aircraft was newly manufactured, modified, or reworked, MAL Code 174 shall be used in NALCOMIS or on the MAF.

10.9.7.3.2 Deficiencies found on subsequent inspections or flights which may be attributed to the manufacture, modification, or rework process may be reported on a supplemental AIDR. Use the same RCN as the initial AIDR. Add "Supplemental" to the title, Block 6, and continue numbering from the discrepancies on the initial AIDR.

10.9.7.4 Deficiencies are categorized as critical, major, or minor.

a. Critical defects constitute hazardous or unsafe conditions, or as determined by experience and judgment could conceivably become so, thus making the aircraft unsafe for flight or endangering operating personnel.

b. Major defects could result in failure or materially reduce usability of the unit for its intended purpose.

c. Minor defects are not likely to materially reduce usability of the unit or product for its intended purpose, or depart from established standards.

10.9.7.5 Critical deficiencies discovered during initial inspection of an aircraft shall be reported via R} JDRS as a CAT I PQDR, and referenced in Block 22 of the initial AIDR. This dual reporting will provide data for immediate action on CAT I PQDRs and assist in the complete investigation of all discrepancies.

10.9.7.6 Submit a negative response if no deficiencies are found on initial acceptance of newly manufactured, modified, or reworked aircraft. State R} "No Deficiencies Noted " in Block 22.

10.9.8 R Joint Deficiency Reporting System (JDRS) HMR, EI, HMR/EI, PQDR (CAT I and CAT II), and AIDR Submittal Process

10.9.8.1 Submit all HMR, EI, HMR/EI, PQDR (CAT I and CAT II), and AIDR R DRs to the ISSC/LMTC for the component, aircraft, software, SE, or program, via JDRS (<https://jdrs.mil>). JDRS can automatically identify the correct ISSC/Quality Team/SWPT by using the Support Team "ST" Look-up feature. If the ISSC/Quality Team/SWPT cannot be determined, contact the JDRS Clearinghouse, via the JDRS web site, using the Technical Dialog or Contact Us tool, or by phone (1-888-832-5972 or 1-888-292-5919). For assistance, the local Clearinghouse Representative contact information is listed on the web site, under the "Help Menu", "Contact Us" link.

10.9.8.1.1 Submit all R DRs per this instruction when deficiencies are discovered. DRs shall NOT be annotated with the phrase "Submitted for Tracking Purposes Only". The ISSC or Quality Team shall determine if the DR shall only be used for tracking/trending purposes based on their review of the discrepancy. It shall be assumed an investigation will take place, unless the ISSC or Quality Team closes the investigation, via a Closing Report or HMR Response, to include disposition instructions of the exhibit (if applicable).

10.9.8.1.2 Follow this instruction's guidelines for TPDR and BTR submission. For support, contact NALDA Customer Support, 1-800-624-6621. Figure 10.9-5 is a partial listing of ISSCs. Refer to NAVAIR-INST 4700.22 or Figure 10.9-7 for a complete listing of LMTC assignments. If COMNAVAIRSYSCOM or COMSPAWARSYSCOM is the ISSC, send the report to the cognizant maintenance engineering team:

10.9.8.1.3 LMTCs may assist ISSCs, however they do not take the place of program ISSCs, for example, F/A-18 and F110. Normally, the action addressee is either the ISSC or LMTC, not both. Information copies can also be sent to the appropriate ISSC or LMTC.

10.9.8.1.4 Conflicts may arise with existing technical publications, TDs, and procedures caused by rapidly changing HAZMAT and HAZWASTE environmental compliance regulations. Conflicts should be reported to the ISSC/LMTC on an environmental report, HMR, EI, or TPDR with FRC Southeast (Code 4.3.4) and ACC/TYCOM as information addressees.

10.9.8.1.5 COMNAVAIRSYSCOM (AIR-4.0) has provided a R JDRS web site enabled capability to O-level, I-level and FRC maintenance facilities to create, transmit, and track HMR, EI, HMR/EI, PQDR and AIDR requests. TPDRs and BTRs shall continue to use the legacy reporting process until the Business Process Reengineering of these reports has been completed. Requests shall be routed to assigned ISSCs and automatically routed to other concerned activities. This web site enabled capability also permits maintenance activities to receive reports and other information, conduct technical dialog with the ISSC engineer, and Quality Team, and verify status of an HMR, EI, HMR/EI, PQDR, and AIDR. The JDRS web site (<https://jdrs.mil>) is accessible by all organizations with a role in R JDRS.

10.9.8.2 Assign an RCN to each R DR, composed as follows:

- a. Element (1) Service designator code (N, V, or R) of originating activity. N is for Navy and Marine Corps aviation non-deploying units, V is for Navy and Marine Corps aviation Atlantic Fleet operating forces, and R is for Navy and Marine Corps Pacific Fleet operating forces.
- b. Elements (2) through (6). UIC of the originating activity, for example, 54056.
- c. Elements (7) and (8) Calendar Year, for example, 07.

d. Elements (9) through (12). Locally assigned control number (Numeric Only), sequence throughout the calendar year without regard for type of report. The first report is 0001 and may be an AIDR, 0002 may be a CAT I PQDR, 0003 may be a TPDR, and 0004 may be another AIDR.

10.9.8.3 Reference the RCN and message DTG of the originating activity on all supplemental correspondence. Include shipping information and the investigation control number (if assigned).

NOTE: R} DRs prepared as a result of an aircraft mishap are not privileged. JDRS users shall exercise extreme care to ensure these reports and requests do not contain privileged information (OPNAVINST 3750.6).

10.9.8.4 HMR, EI, R} HMR/EI, AIDR, and PQDR (CAT I and CAT II) requests and reports shall be created and transmitted using JDRS. When this is not accessible, the following content and format apply to reports (JDRS sample reports are in [Figure 10.9-7](#)):

NOTES: 1. D}_____.

2. The NTP-3 provides the latest message format information and PLA.

Precedence: Priority/routine (as applicable)

FM Message Originator

TO ISSC/LMTC

AIG FOUR TWO THREE

INFO (information addressees are listed below if applicable)

(1) CAO (if known).

(2) NAVICP Philadelphia PA or Mechanicsburg PA (when reporting defective new material).

(3) Cognizant Wing(s).

(4) Cognizant CGMAW(s).

(5) Local supply activity holding subject material.

(6) FRCSE JACKSONVILLE FL//4.9.7/(for environmental issues)

NOTE: Conflicts may arise with existing technical publications, TDs, and procedures caused by rapidly changing HAZMAT and HAZWASTE environmental compliance regulations. Conflicts should be reported to the ISSC/LMTC on an environmental report, HMR, EI, or TPDR with FRCSE Jacksonville (Code 4.9.7) and ACC/TYCOM as information addressees.

(7) Appropriate command listed below when flight safety considerations involve aircraft or equipment common to the Air Force, Army, Coast Guard, or NASA.

Air Force	512SOS KIRTLAND AFB NM//CC//SE// AFMC WRIGHT PATTERSON AFB OH//SE//
-----------	--

Army	CDR AMCOM REDSTONE ARSENAL AL//AMSAM-DSA-UH// CDR USASC FT RUCKER AL//CSSC-Z//
------	---

Coast Guard	COMDT COGARD WASHINGTON DC
-------------	----------------------------

NASA	NASA JOHNSON SPACE CEN HOUSTON TX//CC/CC2/CC3//
------	---

NOTE: List of naval aircraft and engines common to other U.S. military services:

Aircraft Type Model	Service	Engine Type Model	Service
C-9	AF	CFM-56	AF/N
C-12	AF/A	F110	AF/N
C-20	AF/A	F404	AF/N
C-130	AF/CG/N	J60	N
F-4	AF	J85	AF/N
F-16	AF/N	JT8D	AF
F-18	N	PT6A	AF/N
H-1	AF/A	R985	A
H-3	A	T56	AF/CG
H-53	AF	T58	A
H-60	AF/A/CG	T700	AF/A/CG
T-34	AF/N	TF34	AF
T-38	AF/N	T64	AF
	A		

A-Army

AF-Air Force

CG-Coast Guard

N-NASA

(8) Marine Helicopter Squadron One (HMX-1) when flight safety conditions concern H-3, H-46, H-53, or H-60 aircraft.

(9) Supporting station, ship, or IMA.

(10) NAVAIRWARCENACDIV Patuxent River MD (for engines, engine-related components, and their fuels/lubricants).

(11) Supporting Supply Department and DSP for DLRs (CAT I PQDR and EI request only).

(12) Security Classifications are defined in OPNAVINST 5513.1; however, every attempt should be made to use UNCLAS to expedite routing.

(13) NAVOAPROGMGR for NOAP related messages.

SUBJ (Applicable subject or combination of subjects and T/M/S aircraft or equipment nomenclature, for example, HMR/EI E-2C or CAT 1 PQDR T56 TURBOPROP ENGINE.

REF/A/DOC/COMNAVAIRFORINST 4790.2/01FEB05//

REF/B/DOC/OPNAVINST 3750.6R/01MAR01//

REF/C/DOC/OPNAVINST 5102.1D/07JAN05//

REF/D/RMG/Related report(s) and mishap investigation report(s) submitted per OPNAVINST 3750.6, with mishap classification and serial number from the referenced message, for example, USS DWIGHT D EISENHOWER 141956Z SEP 04 VFA-151 CLASS A RTD 10-04. Include only the references applicable to

the occurrence. Include issue date and the latest change date of reference technical manuals. Ensure referenced instructions are current.

AMPN/NARR (Provide amplifying information for reference(s) listed above (if applicable)).

RMKS/1. Reporting custodian and UIC.

2. ISSC/LMTC for failed item. Enter the LMTC or aircraft ISSC when reporting common and general material not installed on or peculiar to a specific aircraft.

3. RCN: See [Paragraph 10.9.8.2](#).

4. Julian date deficiency discovered and location of reporting unit. Omit location if entry will cause message to become classified.

5. NSN of failed or environmentally noncompliant material.

6. Nomenclature, for example, ALQ-126B ECM, J-52-P408 ENGINE, or 1,1,1 TRICHLOROETHANE.

7A. Manufacture Cage, Manufacture Name, City, R} State.

7B. Local Repair Activity Cage, LRA Name, City, R} State.

7C. Shipper's Name, City, State.

8. Manufacturer's PN.

9. Serial, lot, or batch number (indicate number used).

10A. Contract Number.

10B. Purchase Order Number.

10C. Re-order Requisition/Turn-in Doc Nr.

10D. GBL Number

NOTE: For AVDLRs, the Re-order Requisition Number is important to provide proper credit for the deficient part.

11. New, Repaired, Reworked, Overhauled, Upkeep (from RFI Tag).

12. Date manufactured, reworked, or overhauled.

13. Operating time at failure. Measurement unit.

14. Government furnished material? (Yes, No, N/A, or UNK).

15A. Quantity Received.

15B. Quantity Inspected.

15C. Quantity Deficient.

15D. Quantity In Stock.

16. Deficient item works on/with:

A. End item (aircraft, engine).

B. Next higher assembly (if applicable).

17. Dollar value of deficient material (if known) and man-hours to repair; otherwise UNK.

18. If hazardous material or procedure, include MILSPEC, type, class/grade, or NONE if no MILSPEC is available (otherwise R} N/A).

19. Item under warranty: YES, NO, R} N/A, or UNK.

20. WUC.

21A. Identify the Supply Unit to ship the Exhibit.

21B. Action/Disposition Narrative. (ex. HOLDING EXHIBIT, TRANSDUCER PICK-UP AT NAS LEMOORE SUPPLY PENDING DISPOSITION).

22. Details

A. Narrative description of abnormal function, known or probable causes, pertinent TDs not incorporated, environmental issues listing references and regulatory agency, comments/recommendations, and EI (if requested).

B. How safety of personnel or activity mission is affected.

C. Number of similar deficiencies in like items reported by the originating activity, for example, five in the past four months.

D. How deficiency was detected or confirmed, for example, visual or functional operation and where discovered, for example, maintenance or in-flight.

E. Storage and handling information (if applicable).

F. Indicate if supporting documents will be supplied. When photographs are taken, place a ruler alongside the object so as to appear in each photograph. Measurements should also appear on sketches.

G. Description of incorrectly identified new material (if applicable).

H. Recommendations.

I. Name, title, DSN and commercial telephone numbers of cognizant official (E-7 or above). If deployed, delete phone number and insert the word "DEPLOYED".

J. Aircraft model and bureau number, for example, SH-60F / 164069.

K. Aircraft engine, APU, or SEGTE, model and serial number, TSN, TSO, last overhaul activity, and number of overhauls. Enter information only if applicable and not already included.

L. If TFOA, list the following:

1. Last maintenance performed on, or entry into, affected area. Last time item repaired/replaced.

2. Description of damage to TFOA item and any remaining portions attached to aircraft. Comment if photos are available. The activity shall request an EI if a TFOA item is recovered or portion of it remains on the aircraft and the cause of departure is not readily apparent.

2. Description of damage to TFOA item and any remaining portions attached to aircraft. Comment if photos are available. The activity shall request an EI if a TFOA item is recovered or portion of it remains on the aircraft and the cause of departure is not readily apparent.
3. If possible, describe flight profile at time of loss.

10.9.9 Technical Publications Deficiency Reports (TPDRs) and Non-Web Reporting

10.9.9.1 TPDRs provide a simplified procedure for R} reporting safety hazards and routine deficiencies found in COMNAVAIRSYSCOM technical publications. They shall not be used for reporting deficiencies in instructions or notices.

NOTE: COMNAVAIRSYSCOM (AIR-6.8) shall have process ownership responsibilities for the TPDR Program.

10.9.9.2 Technical publications include MRCs, checklists, WUC manuals, shop process cards, MIMs, weapons or stores loading manuals, conventional or nuclear weapon checklists, stores reliability cards, R} IPBs, and TDs.

10.9.9.3 A CAT 1 TPDR message ([Figure 10.9-9](#)) is required when a A} safety related technical publication deficiency is detected which, if not corrected, could result in death or injury or damage to or loss of aircraft, equipment, or facilities. CAT 1 TPDR priority message shall be submitted within 24 hours of discovery of a A} safety related deficiency in the following format:

NOTE: Refer to NTP-3 for latest R} GENADMIN MTF and PLA information.

Precedence: Priority

FM Message Originator

TO NATEC SAN DIEGO CA //6.8.5//

ISSC/LMTC (of the equipment/program)

AIG FOUR TWO THREE

INFO (as specified)

Security classifications are defined in OPNAVINST 5513.1; however, every attempt should be made to use UNCLAS to expedite routing.

SUBJ (Applicable subject and T/M/S aircraft or equipment nomenclature, for example, CAT I TPDR SH-60F or CAT 1 TPDR T700 TURBOSHAFT ENGINE)

REF/A/DOC/COMNAVAIRFORINST 4790.2/01FEB05//

AMPN/NARR (Provide amplifying information for reference(s) listed above (if applicable).

RMKS/

1. Reporting custodian and UIC.
2. Aircraft/equipment/program ISSC/LMTC.
3. RCN: See [paragraph 10.9.8.2](#).
4. Julian date deficiency was discovered and location of reporting unit. Omit location if entry will cause the message to become classified.
5. NSN of publication.

6. Through 21. NA.

22. Details.

A. Technical publication number. (One technical publication per TPDR.)

B. Aircraft/weapon system model or equipment number.

C. Basic date of technical publication.

D. Change date and change number.

E. Work package number (if applicable).

F. Page number.

G. Paragraph number.

H. Figure number/table number.

I. Through K. NA.

L. Deficiency (be specific).

M. Recommendations (be specific).

N. Name, title, DSN and commercial telephone numbers of cognizant official (E-7 or above). If deployed, R} omit phone numbers and insert the word "DEPLOYED".

10.9.9.4 CAT 2, 3, and 4 TPDRs are non-safety related technical publication deficiencies which, if not corrected, may impact mission readiness but would not result in death or injury A} or damage to or loss of aircraft, equipment, or facilities. CAT 2, 3, and 4 TPDRs include technical errors, incorrect measurement values, incorrect use of SE, incorrect sequence of adjustments, PN errors or omissions. They are defined as follows:

a. CAT 2 TPDR is a non-safety related technical publication R} deficiency that results in ineffective maintenance that directly impacts mission readiness in an adverse manner, causing a maintenance delay of 8 hours or more. All non-safety related measurement value discrepancies, such as PSI, rate of flow, torque values or electrical readings shall be submitted as a CAT 2 TPDR. In addition, PN discrepancies causing a maintenance delay of 8 hours or more shall be submitted as a CAT 2 TPDR.

b. CAT 3 TPDR is a non-safety related technical publication R} deficiency that results in a maintenance delay of less than 8 hours through an acceptable workaround. In addition, PN discrepancies causing a maintenance delay of less than 8 hours shall be submitted as a CAT 3 TPDR.

c. CAT 4 TPDR is a R} non-safety related technical publication deficiency of a non-technical or administrative nature, that has no impact on mission readiness. CAT 4 TPDRs include misspelled words, List of Effective Pages or typographical errors.

NOTE: CAT 4 TPDRs shall not be used to report R} measurement value discrepancies, including PSI, rate of flow, torque values, electrical readings or other measurment readings, or illegible or incorrect PNs. These are not considered typographical errors and shall be reported as CAT 1, 2 or 3, as previously defined.

10.9.9.5 CAT 2, 3 and 4 TPDRs shall be submitted digitally using the A} TMAPS link on the NATEC web site (<https://mynatec.navy.mil>). Submission of digital TPDRs allows for quicker receipt, review, response, and resolution by the cognizant ISSC/LMTC. In addition, TPDR statuses and reports may be obtained. The TPDR originator receives email notification of changes in the status of the TPDR if an email address was provided during TPDR submission. If web site entry is not possible, TPDRs may be submitted

via email to nani_tpd@navy.mil. For additional information, contact the NATEC TPDR Clearinghouse Coordinator (NATEC, Code 6.8.5) at DSN 735-2699 or COMM (619) 545-2699 or the local Technical Publication Specialist. Information is also available in NAVAIR 00-25-100.

10.9.9.6 NATEC (Code 6.8.5.3), as the central distribution manager for all COMNAVAIRSYSCOM technical publications and the central clearinghouse for COMNAVAIRSYSCOM's TPDR Program, shall:

a. Provide a TPDR Clearinghouse function staffed to coordinate TPDR actions, ISSC/LMTC responsibilities, reassignment of TPDRs between sites/ISSCs/LMTCs and to monitor, follow up and ensure responses are provided within prescribed time frames ([paragraph 10.9.3.2](#)).

b. Maintain an active and historical record of all technical **R}** publication deficiencies within the TMAPS link on the NATEC web site (<https://mynatec.navair.navy.mil>).

c. **R}** Assign action on all CAT 1 TPDRs to the responsible ISSC/LMTC, making notification within 1 working day after receipt of a CAT 1 TPDR within the TMAPS link on the NATEC web site.

d. Coordinate action with responsible technical publication authoring activities (ISSCs/LMTCs, OEMs or subcontractors) to ensure correction of technical publications.

e. **A}** Provide TPDR status (as requested).

10.9.9.7 ISSCs/LMTCs shall:

10.9.9.7.1 Screen **R}** and acknowledge all incoming TPDRs to ensure they have been submitted using the applicable categories (CAT 1, CAT 2, CAT 3, or CAT 4) and change or update status on each within the TMAPS link on the NATEC web site. TPDR acknowledgment time frame, per fleet entitlements, is defined as:

a. Within 5 working days of receipt of a CAT 1 TPDR.

b. Within 30 working days of receipt of a CAT 2, 3, or 4 TPDR.

10.9.9.7.2 Determine validity and develop corrective action(s) (as appropriate) to provide resolution per the following timeframes:

10.9.9.7.2.1 CAT 1 TPDRs. Every effort shall be made to complete resolution and issue corrective action within 30 days of receipt of CAT 1 TPDRs. Corrective action is defined as an IRAC, RAC, Change, or Revision to applicable technical publication(s).

a. If resolution is not determined within 5 working days of receipt of CAT 1 TPDR a Preliminary Response shall be provided. In all cases, a response or report shall be provided within 5 working days of receipt of a CAT 1 TPDR; either as a Preliminary Response or a Final Report.

b. If resolution is not determined within 30 days and for every 30 days thereafter an Interim Response(s) shall be provided until final resolution.

c. Upon final resolution, a Final Report shall be provided indicating final disposition and pending/closing action(s) (as appropriate). A Final Report may take the place of a Preliminary Response if final resolution is determined within 5 working days of receipt of CAT 1 TPDR.

10.9.9.7.2.2 CAT 2 TPDR. Complete validation and annotate TPDR status within the **R}** TMAPS link on the NATEC web site (<https://mynatec.navair.navy.mil>) to indicate validity and additional steps to be taken

(if any). Every effort shall be made to complete resolution and issue corrective action. Corrective action for CAT 2 TPDRs shall include incorporation into a planned technical publication change or revision, issue as a separate emergent change or revision, or as urgency demands, issue as an IRAC or RAC to the applicable technical publication(s).

10.9.9.7.2.3 **R}** CAT 2, 3, and 4 TPDRs. Screen for safety related technical publication deficiency and change TPDR to CAT 1 within the TMAPS link on the NATEC web site indicating screening has been completed.

10.9.9.7.2.4 CAT 3 and 4 TPDRs shall be held for additional review, validation and incorporation as funding permits. The ISSC/LMTC shall attempt to incorporate CAT 3 and 4 TPDRs in conjunction with higher priority manual changes.

10.9.9.7.3 Provide TPDR status (as required) to the ACC/TYCOM.

10.9.9.7.4 Coordinate with NATEC to resolve problems with identification of responsibility for TPDRs, to ensure they are:

- a. Assigned to the correct engineering and data management authorities.
- b. Managed effectively to provide technical **R}** publication users timely and accurate corrective actions.

10.9.9.7.5 TDs generated by ISSCs. The TD system is the authorized medium for directing the accomplishment and recording of modifications and one-time inspections of all equipment procured by or for COMNAVAIRSYSCOM, including manufacturing or procurement by field activities and procurements by ICPs.

10.9.10 Baseline Technical Deficiency Report and Non-Web Reporting

10.9.10.1 BTRs (Figure 10.9-10) are used to report NTCSS Optimized OMA NALCOMIS baseline deficiencies found in a specific PMA baseline. They are not used for reporting deficiencies in instructions or notices.

10.9.10.2 The report is required when a deficiency is detected which, if not corrected, will not allow the user to issue WOs against inspections, tracked components, TDs, or unscheduled maintenance. Deficiencies include wrong WUC to CAGE/PN relationship, items with no WUC, incorrect removal intervals for a life limited component, TDs received by the activity and not in the baseline, and incorrect inspection intervals for an aircraft or tracked component, such as, AAE, MME, buddy stores, etc.

10.9.10.3 The preferred method to submit BTRs is by e-mail. E-mail address is: oomabaseline@navy.mil. When e-mail connectivity is not available submit BTRs by naval message. The report shall be submitted to the COMNAVAIRSYSCOM Baseline Help Desk with information to TYCOM, Functional Wing, and Baseline Manager in the following format:

NOTES: 1. AFCs and AFBs assigned at the O-level use a generic airframe WUC, such as 1000000. CM ALS electronic history requires that TDs assigned to specific components be assigned to the WUC, CAGE, and PN for that component.

2. Refer to NTP-3 for latest message formats information and PLA.

Precedence: Priority

FM Message Originator

INFO TYCOM

Supporting D-level ISSC (if applicable)

Security classifications are defined in OPNAVINST 5513.1; however, every attempt should be made to use UNCLAS to expedite routing.

SUBJ (Applicable subject and T/M/S aircraft or equipment nomenclature, for example, BTR SH-60B or BTR SH-60B TD PPC 101.)

REF/A/DOC/COMNAVAIRFORINST 4790.2/01FEB05//

AMPN/NARR (Provide amplifying information for reference(s) listed above (if applicable)).

RMKS/1. Reporting custodian/organization code/UIC.

2. T/M/S of aircraft/SE/ALSS, etc. and program manager.

3. RCN (for example, BTR HSL-41 Calendar Date/SN).

4. Calendar date deficiency was discovered and location of reporting unit, Home or Deployed.

5. Aircraft/weapon system model, SE or CAGE and part number of component.

6. Reference (WUC manuals, IPB, MIM, TD, PMIC, MESM, MRC, or Maintenance Plan).

7. Basic date of reference or message Date Time Group.

8. Change date, IRAC date, or change number.

9. Description of the problem (be specific).

10. Recommendations (be specific).

11. Name, title, DSN and commercial telephone numbers of cognizant official, and if available the e-mail address.

10.9.10.4 COMNAVIAIRSYSCOM is the central manager for baselines. COMNAVIAIRSYSCOM (AIR-6.8) will provide POC and e-mail addresses of their baseline managers to the fleet. Their responsibilities include, but are not limited to the following:

- a. Maintaining a record of all BTRs.
- b. Acknowledging receipt of each BTR and assigning action as required. Notification will be accomplished within one working day after receipt of a BTR.
- c. Coordinating action with depot baseline managers and contractors to ensure correction to baselines.
- d. Monitoring the status of BTRs to ensure corrective action is accomplished.
- e. Providing BTR status as requested.

10.9.10.5 PMA/ISSC baseline managers shall:

- a. Follow-up each BTR to ensure corrective action is accomplished.

- b. Provide BTR status (as required) to ACC/TYCOM and Wings/MAGs/CVWs.

10.9.10.6 COMNAVAIRSYSCOM (AIR-6.8) will monitor and coordinate BTRs for possible software changes and baseline management document changes. COMNAVAIRSYSCOM (AIR-6.8) will coordinate all NAMP policy deficiencies.

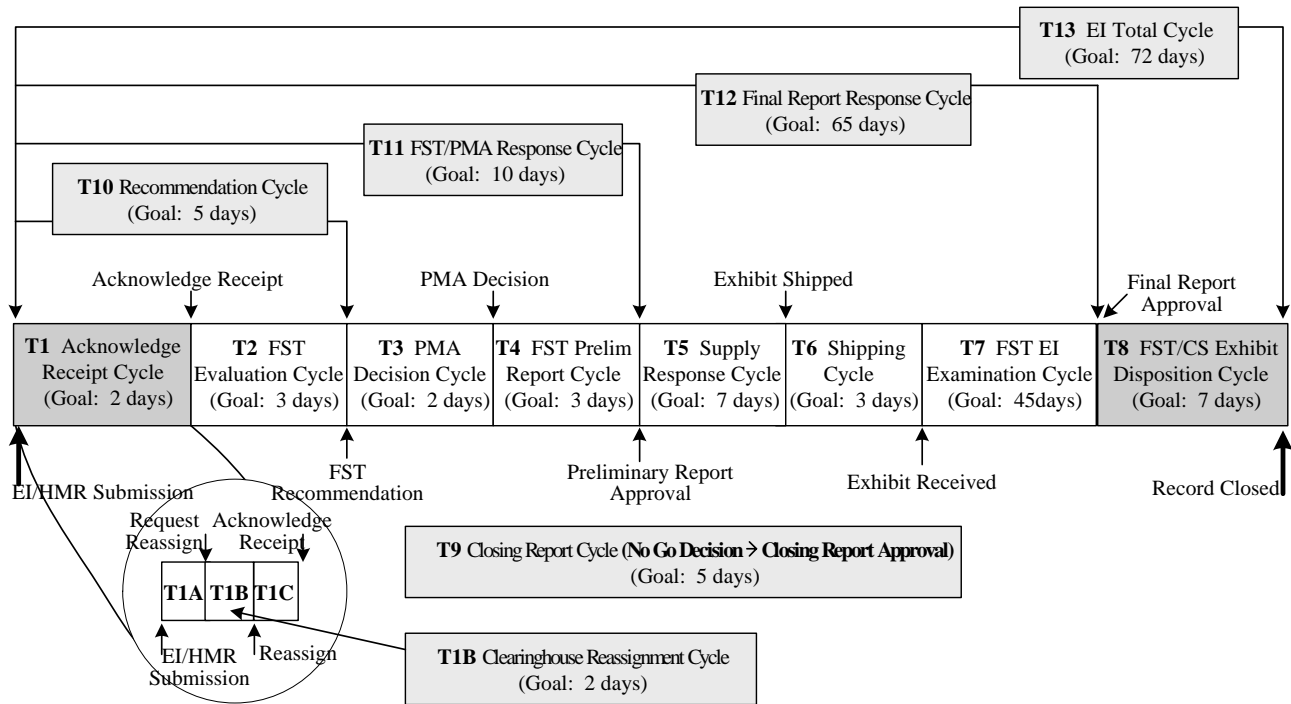


Figure 10.9-1: EI Process Timeline

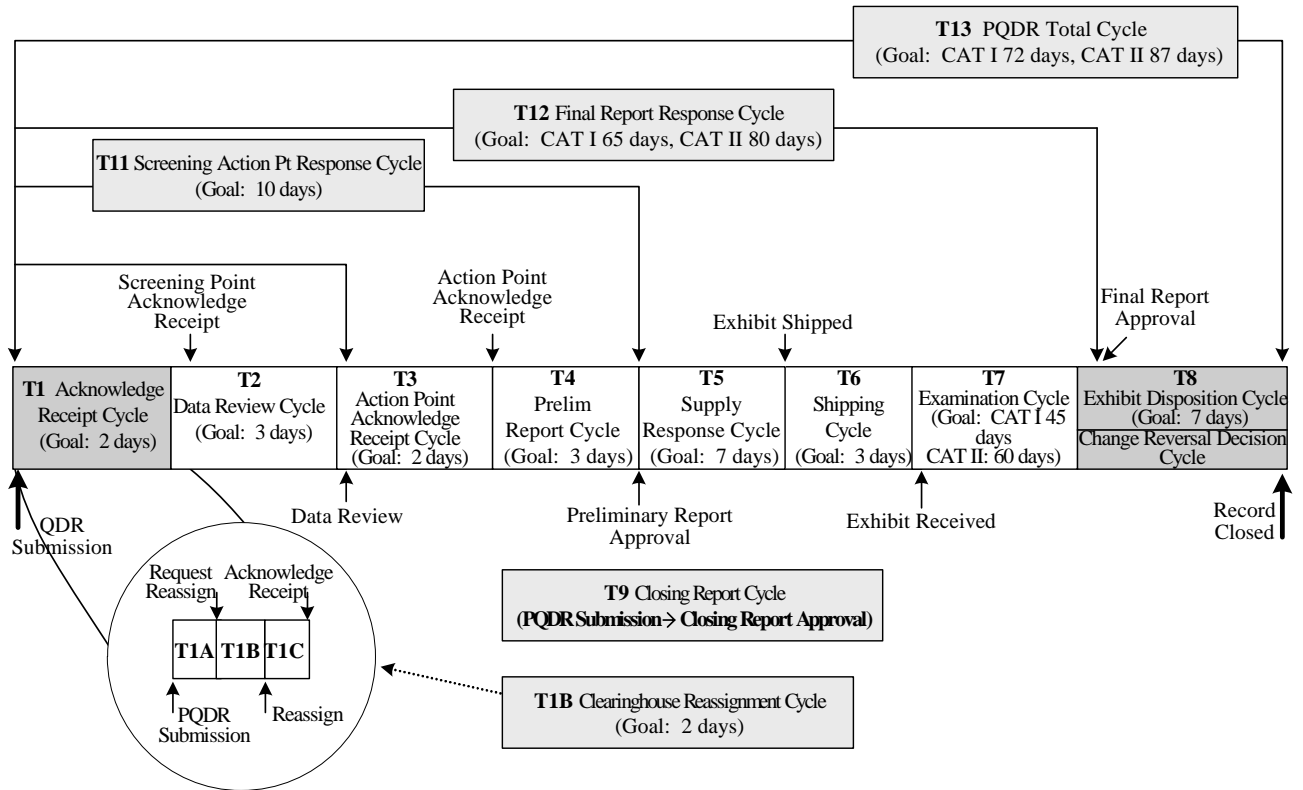
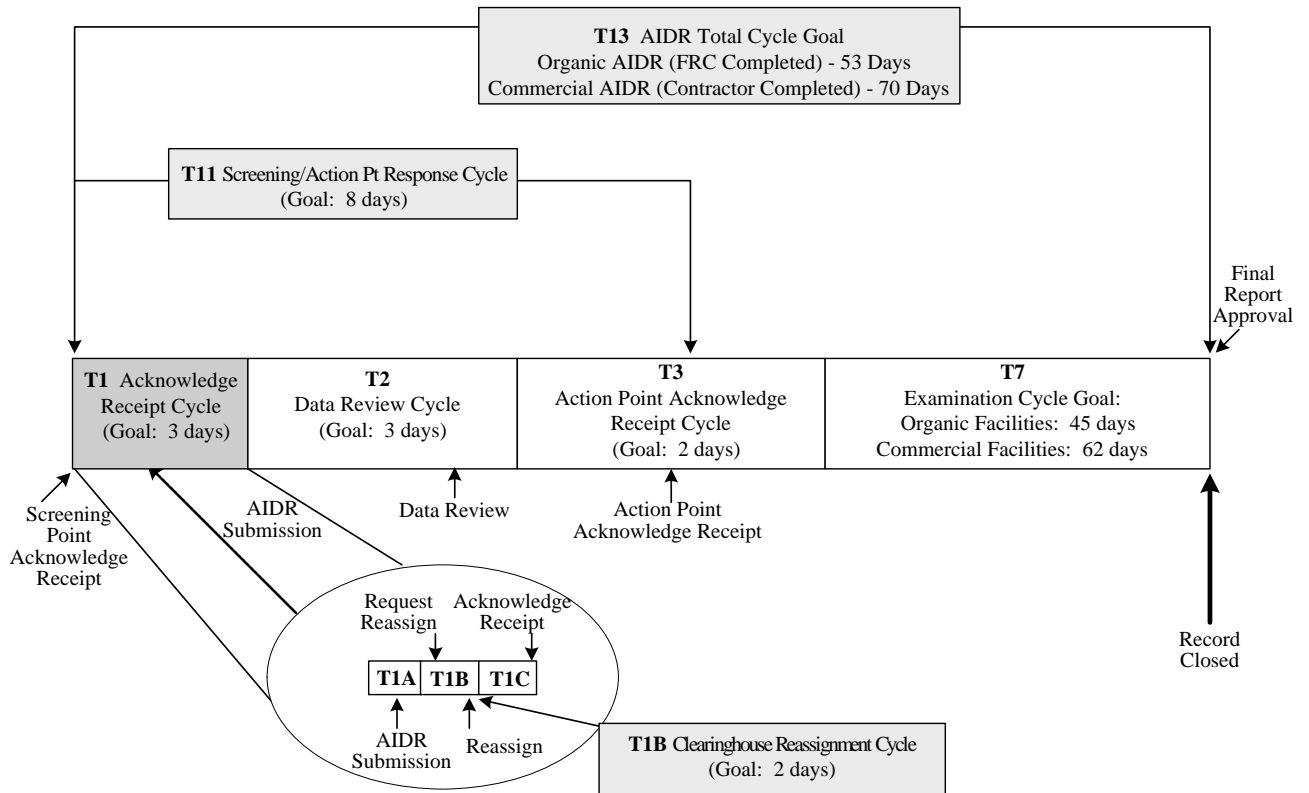


Figure 10.9-2: PQDR Process Timeline



NOTE: Goals deployed on timeline reflect the average TAT goal for each process step and include additional time to allow for weekends and holidays.

Figure 10.9-3: AIDR Process Timeline

NAMP INDOCTRINATION TRAINING

NAME: _____

RATE/RANK: _____

DATE ARRIVED: _____

TOPIC	INSTRUCTOR	DATE COMPLETED
Fuel Surveillance Program		
Navy Oil Analysis Program		
Aviators Breathing Oxygen Surveillance Program		
Hydraulic Contamination Control Program		
Tire and Wheel Maintenance Safety Program		
Quality Assurance Audit Program		
Oil Consumption Program		
Naval Aviation Maintenance Discrepancy Reporting Program		
Technical Directive Compliance Program		
Foreign Object Damage Prevention Program		
Tool Control Program		
Corrosion Prevention and Control Program		
Plane Captain Qualification Program		
Egress/Explosive System Checkout Program		
Support Equipment Operator Training and Licensing Program		
Support Equipment Planned Maintenance System Program		
Naval Aviation Metrology and Calibration Program		
Hazardous Material Control and Management Program		
Individual Component Repair List Program		
Electromagnetic Interference/Electrostatic Discharge Program		
Miniature/Microminiature Program		
Aircraft Confined Space Program		
Support Equipment Misuse and Abuse		
Emergency Reclamation		
Nondestructive Inspection Program		
Maintenance Department Safety Program		

Figure 10.9-4: NAMP Indoctrination Training

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<u>Program Manager</u>	<u>In-Service Support Center</u>	<u>Equipment Supported</u>
PMA-187	NAV ISSC	Navigation Systems, GPS
PMA-201	CSW ISSC	Conventional Strike Weapons, JDAM, JSOW
	CAD ISSC	Explosive Cartridges, CADs, PADs, Rockets, JATO, NACES Thermal Batteries
	AAE ISSC	Bomb Racks, Aircraft Missile Launchers
PMA-202	AES ISSC	Aircrew Escape Systems (AES)
	OAS ISSC	GRU-7, SJU, NACES, Ejection Seat Mounted Parachutes, Aircrew Oxygen System (AOS), LOX Converters, O2 Regulators, O2 cylinders, OBOGS
	LSS ISSC	Life Support Systems (LSS), Survival Equipment, Bail Out Parachutes
	NVS ISSC	Night Visions Systems (NVS), AVS-6, AVS-9, Catseye
	R/SE ISSC	Radio/Survival Electronics (R/SE), PRC-90, PRC-112, PRC-125, PRT-5, URT-33, URT-140
PMA-205	TS ISSC	Aviation Training Equipment/Devices
PMA-207	CA ISSC	Commercially Supported Aircraft/Engines. TC-4C, C-9B, C-12, C-20, C-26, UC-35, C-37, CT-39G, T-39N, C-40, DC-130, C-130J, MD-369, T-34C, T-44A, TH-6B, TH-57, JT8D, PT6A, JT12, MK511, MK5298X, MK611, T56-A-9, 250-20N, AE2100D3
PMA-208	TRGT ISSC	Aerial Targets and Decoys Systems
PMA-209	ACE ISSC	Air Combat Electronics (ACE), ARC-182, ARC-210, AYK-14, APX-100, GPWS
	ACE/OOP ISSC	Out of Production ACE Systems
PMA-213	ATC/LS ISSC	Air Traffic Control and Landing Systems
PMA-225	WWMM ISSC	Worldwide Multi-Mission Systems, AGM-65, AGM-88, AGM-114, BGM-71
PMA-226	H-46 ISSC	H-46, T58
	F-4 ISSC	QF-4,
PMA-231	E-2/C-2 ISSC	E-2/C-2, ATDS
PMA-233	MPS ISSC	Mission Planning Systems, JMPS, TAMPS
PMA-234	EA-6B ISSC	EA-6B, J52-P-408
PMA-241	F-14 ISSC	F-14, F110, TF30-P-414A
		Photographic Systems
PMA-242	DSS ISSC	Defense Suppression Systems, AGM-65, AGM-88, AGM-114, BGM-71
PMA-248	TTR ISSC	Tactical Training Range Systems, KGV-23, JTCTS, LATR, TACTS
PMA-251	ALRE ISSC	Aircraft Catapults and Arresting Gear, Helicopter Landing Systems, Visual and Optical Landing Aids, Shipboard Aviation Data Management Systems, Wind Measuring Systems, Shipboard Aviation Marking and Lighting, USMC Expeditionary Airfield Equipment, Afloat Navy Aircraft Fire-Fighting Equipment
PMA-257	AV-8 ISSC	AV-8B, TAV-8B, F402
PMA-258	SOAD ISSC	Standoff Missile Systems, AGM-84, AGM-119
PMA-259	AAW ISSC	Air to Air Weapons, AIM-7, AIM-9
PMA-260	SE ISSC	Aviation Common Support Equipment, CASS
PMA-261	H-53 ISSC	CH-53, MH-53, T64
	EXHELO ISSC	VH-60, VH-3
PMA-263	UAV ISSC	Unmanned Aerial Vehicles (UAV). Pioneer, Predator, VTUAV, JTUAV
PMA-264	ASW ISSC	Air ASW Systems, Sonobouy, Sensors, GASS
PMA-265	F/A-18 ISSC	F/A-18, F404, F414
PMA-271	ASC ISSC	Airborne Strategic Communications Systems, E-6, TC-18, CFM56
PMA-272	EWS ISSC	Tactical Aircraft Electronic Warfare Systems, ASPJ, IDECM, ALR-67, AAR-47, ALE-29, ALE-39, ALE-47
PMA-273	T-45 ISSC	T-45 TS, T-6, F405
	T-6 ISSC	T-6
PMA-275	V-22 ISSC	V-22, T406 (AE1107C)
PMA-276	H-1 ISSC	AH-1/UH-1, T400, T700
PMA-280	TOMAHAWK ISSC	Tomahawk Cruise Missile
PMA-281	CM ISSC	Cruise Missiles
	CMCC ISSC	Cruise Missile Command and Control Systems
PMA-282	WCS ISSC	Tactical Weapons Control Systems
PMA-290	P-3 ISSC	Maritime Surveillance Aircraft. P-3, EP-3, T56
	S-3 ISSC	S-3, ES-3, TF34
	ARS ISSC	Aerial Refueling Systems
PMA-299	MMH ISSC	Multi-Mission Helicopters. H-60, SH-2G
PMS-210	AMCM ISSC	Airborne Mine Countermeasures
Various Programs	TM ISSC	Technical Publications
	BAT ISSC	Aircraft Batteries
	APU ISSC	APU, Auxiliary Power Units, GTC, GTCP
	ATS ISSC	Air Turbine Starter (ATS), Ram Air Turbine, Starters, Cooling Turbines, Valves/Regulators, Heat Exchangers
	PROP ISSC	Propellers
	XMSN ISSC	Gearbox Bearings, Transmissions

Figure 10.9-5: Partial Listing of In-Service Support Centers (Equipment Supported)

<u>Priority Number</u>	<u>Type of WorkLoad</u>
1	<p>Special Projects. Reserved for specific assignment by COMNAVAIRSYSCOM to fulfill emergency requirements of the CNO.</p> <p>Investigations required by aircraft accident boards, boards of investigations, boards of inquiry, or safety DRs (EI, HMR/EI and CAT I PQDRs) under <u>R} JDRS</u>.</p>
2	<p>CAT II PQDRs under <u>R} JDRS</u>.</p> <p>Prototypes and projects of an urgent nature directed by COMNAVAIRSYSCOM</p> <p>Component Level Schedule Level One B08.</p> <p>Emergency in-use SE requirements (carrier deployments, aircraft down for SE).</p>
3	<p>Acceptance and transfer of aircraft/missiles in delivery. Aircraft in COMNAVAIRSYSCOM field activity custody awaiting deliver and requiring correction of discrepancies/compliance with mandatory technical directives (including modifications).</p> <p>Manufacturing, B08 weekly level two (including SE components).</p> <p>Emergency repairs to missiles, aircraft, power plants, components, and customer services to meet operational requirements established by command authority. Regularly scheduled in-use SE requirements, including calibration and related support activities.</p> <p>Industrial field team modifications and on-site SE (including calibration) industrial field team support.</p>
4	<p>Programmed D-Level industrial workloads. Aircraft SDLM; rework of missiles, power plants, B08 weekly three or four level requirements (including SE components), SE and related routine supporting programs.</p> <p>Routine prototypes and projects not specified under priority 2 above.</p>
5	<p>Preparation of aircraft for delivery to long term storage points.</p> <p>Salvage and reclamation.</p>

Figure 10.9-6: R} Workload Priority

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Precedence:	Priority/Routine as applicable	
FROM:	Message Originator PLA	
TO:	PLA of NAVAIR ISSC/Screening Point	
	AIG 423	
INFO:	Enter PLAs of other activities as applicable	
SUBJ:	Subject	(ex. FA-18 CAT II PQDR)
REFS:	References	(include COMNAVAIRFORINST 4790.2)
(amplify the references)		
RMKS/1.	Reporting Custodian/UIC	(ex. VFA-122/09355)
2.	PLA of ISSC Unit	(ex. FRCSE NORTH ISLAND CA)
3.	RCN	(ex. R09355-03-0030)
4.	Julian date/location deficiency discovered	(ex. 03126/NAS LEMOORE CA)
5.	Cog Symbol, NSN, SMIC	(ex. 7RH, 1234-00-123-1234, EY)
6.	Nomenclature	(ex. TRANSDUCER, MOTION PICK-UP)
7A.	Mfr CAGE, Mfr Name, City, State	(ex. 81982, NOMO MFG CO, ALBANY, NY)
7B.	LRA CAGE, LRA Name, City, State	(ex. 54321, GOOD2GO INC., NEWARK, DE)
7C.	Shipper's Name, City, State	(ex. A-1 SHIPPERS, NORFOLK, VA)
8.	Manufacturer's part number	(ex. 140-203-1)
9.	Serial number, Lot or Batch number	(ex. 172, N/A)
10A.	Contract Number	(ex. N12345-01-C-1234)
10B.	Purchase Order Number	(ex. N1234599PO1234)
10C.	Re-order Requisition/Turn-in Doc Nr.	(ex. N03300-5032-GD00) (For EI or HMRs use N/A or UNK)
For AVDLRs, the Re-order Requisition Number is important to provide proper credit for the deficient part.		
10D.	GBL number	(ex. 654321BA)
11.	New, Repaired, Reworked, Overhauled, Upkeep (from RFI tag)	(ex. NEW)
12.	Date manufactured, reworked, or overhauled	(ex. 03 AUG 99)
13.	Operating time at failure Measurement Unit	(ex. 430 FLIGHT HOURS)
14.	Government Furnished Material? (Yes, No, N/A or UNK)	(ex. NO)
15A.	Quantity Received	(ex. 1)
15B.	Quantity Inspected	(ex. 1)
15C.	Quantity Deficient	(ex. 1)
15D.	Quantity In Stock	(ex. 3)
16A.	End Item Nomenclature, End Item Serial Number	(ex. FA-18E, N/A)
16B.	NHA NSN, NHA Nomenclature, NHA Part Number, NHA Serial Number	(ex. 4321-00-321-5432, WHEEL ASSY, 617018, N/A)
17.	Dollar value of deficient material DOLLARS, Man-hours to repair/replace MHRS,	(ex. 5790.00 DOLLARS, 3 MHRS, 500.00 DOLLARS)
18.	Hazmat Procedure	(ex. N/A)
19.	Item under warranty (Yes, No, N/A or UNK) (expiration date)	(ex. UNK)
20.	WUC	(ex. 13A1210)
21A.	Identify Supply Unit to Ship Exhibit	(ex. NAS LEMOORE SUPPLY)
21B.	Action Disposition Narrative	(ex. HOLDING EXHIBIT, TRANSDUCER PICK-UP AT NAS LEMOORE SUPPLY PENDING DISPOSITION INSTRUCTIONS)
22A.	Description of failure/discrepancy	
22B.	How safety of personnel or activity mission is affected	
22C.	Number of similar deficiencies in like items reported by the originating activity	
22D.	How deficiency was detected or confirmed	
22E.	Storage and handling information	
22F.	Indicate if supporting documents will be supplied	(ex. PHOTOGRAPHS AVAILABLE)
22G.	Description of incorrectly identified new material	
22H.	Recommendations	(for EIs and HMRS: enter N/A) (for PQDR: Fleet enter N/A: Depot list process recommendations)
22I.	Name of Cognizant Official	
22J.	Aircraft model, Bureau number	(ex. FA-18E, 165664)
22K.	Engine model, Serial number, Time Since New, Time Since Rework	(ex. F404-GE-402, 0360419, 1.5 HOURS, 0 HOURS)
22L1.	Date Last Repaired/Replaced, Last Maintenance Performed	(for EIs and HMRS: enter date and describe, for PQDRs: enter N/A)
22L2.	Damage to TFOA Item	(for EIs and HMRS: enter description, for PQDRs: enter N/A)
22L3.	Describe Profile at Loss	(for EIs and HMRS: enter description, for PQDRs: N/A)

Figure 10.9-7: Aviation EI, HMR, PQDR Message Template

Lead Maintenance Technology Centers/Maintenance Technologies	Points of Contact
FRCNE CHERRY POINT NC	
Aviation Gas Free Engineering	(252) 464-9341; DSN 451
Composite Repair	-9884/7396
Elastomeric Materials	-9341
Engine Blade/Vane Repair	-7616
Failure Analysis	-7155
Fluid Contamination	-7164
Inorganic Coatings	-9888
Vibration Analysis	-8046
FRCSE JACKSONVILLE FL	
Environmental	(904) 542-0516; DSN 942 X122
Materials Testing (Mechanical Testing & Chemical Analysis)	(904) 542-4516; DSN 942 X155
Paint/Organic Coatings	-4516 X131
Thermal Spray	-4521 X141
Tribology	-4516 X155
FRCSW NORTH ISLAND CA	
Adhesive Bonding/Sealants	(619) 545-9745; DSN 735
Bearings	-7690
Canopies/Transparencies	-9737
Corrosion Prevention/Control	-9756
Heat Damage Evaluation	-7816
Heat Treating	-9760
Nondestructive Testing/Inspection	-9734
Preservation	-9759
Tires	-9755
Welding/Brazing	-7831
COMNAVAIRSYSCOM PATUXENT RIVER MD	
Aircraft Wiring	(301) 342-0808; DSN 342
NAVAIRWARCENACDIV PATUXENT RIVER MD	
Engine Composites	(301) 757-0383; DSN 757
Fuels/Lubricants	-3408
NAVAIRWARCENWPNDIV CHINA LAKE CA	
Airborne Weapons Materials	(760) 939-1602; DSN 437-1602
NAVAIRWARCENWPNDIV POINT MUGU CA	
Airborne Weapons and Targets Maintenance/Handling	(805) 484-6537; DSN 893-6537
NAVSURFWARCENDIV CRANE IN	
Electrochemical Power Systems (Batteries)	(812) 854-4103; DSN 482-4103
Electrical/Electronic Assemblies/Electrostatic Discharge	(812) 854-1973; DSN 482-1973

Figure 10.9-8: Lead Maintenance Technology Centers/Maintenance Technologies Points of Contact

FM USS CARL VINSON
TO NATEC SAN DIEGO CA//TPDR//
NAVAIRWARCENWPNDIV CHINA LAKE CA//JJJ//
AIG FOUR TWO THREE
INFO COMSTRKFITWINGSPAC LEMOORE CA//JJJ//
BT
UNCLAS //N04790//
MSGID/GENADMIN/USS CARL VINSON//
SUBJ/CAT 1 TPDR NES-12 PARACHUTE ASSY//
REF/A/DOC/COMNAVAIRFORINST 4790.2/15FEB08//
REF/B/DOC/NA 13-1-6.2/01OCT95//
NARR/REF A IS NAVAL AVIATION MAINTENANCE PROGRAM. REF B IS EMERGENCY PERSONNEL AND
DROGUE PARACHUTE SYSTEM MANUAL.//
RMKS/1. USS CARL VINSON AIMD/03370
2. NAVAIRWARCENWPNDIV CHINA LAKE CA
3. R20993-96-0014
4. 6010/USS CARL VINSON
5. 0513-LP-000-2150
6. THROUGH 21. NA
22. DETAILS
A. NA 13-1-6.2
B. NES-12 PARACHUTE ASSY
C. 01 OCT 95
D. NA
E. NA
F. 15-12C
G. 15-18A-14
H. 15-12C
I. THROUGH K. NA
L. ASSY INDUCTED INTO AIMD FOR SCHEDULED REPACK AND USE AS A TRAINING AID BY
PARALOFT PERSONNEL. DURING TRAINING AND ACTIVATION OF THE FOUR LINE RELEASE SYSTEM,
THE DAISY CHAIN SECURING LINES 1 AND 2 FAILED TO UNCHAIN. INVESTIGATION REVEALED THAT
THE FF THREAD ENTERS AND EXITS THE FLUTE TOO CLOSELY, THE INDIVIDUAL THREADS OF THE
FLUTE WEBBING WILL BREAK INSTEAD OF THE FF THREAD. IF THE LAST LOOP OF THE DAISY CHAIN
IS NOT PULLED INTO THE FLUTE TO POSITION IT DIRECTLY UNDER THE ENTRY AND EXIT POINTS OF
THE FF THREAD IN THE FLUTE, THE THREAD WILL BREAK BUT COULD BE PULLED THROUGH THE
FLUTE WEBBING AND BE OF SUFFICIENT LENGTH TO BECOME ENTANGLED IN THE DAISY CHAIN.
THIS COULD CAUSE A LOCKING OF THE REMAINING DAISY CHAIN AS IT DID IN THIS CASE. IF THE FF
THREAD DOES NOT PIERCE THE LANYARD THROUGH THE CENTER, BUT ONLY CATCHES A PORTION
OF THE OUTER CASING, IT IS POSSIBLE TO RUPTURE THE OUTER CASING OF THE LANYARD AND FAIL
TO BREAK THE FF THREAD TACKING. PHOTOGRAPHS ARE AVAILABLE UPON REQUEST.
M. RECOMMENDATIONS:
1. RECOMMEND FOLLOWING WARNING BE INSERTED BETWEEN STEPS 13 AND 14 OF PARA 15-18A OF
REF B: WARNING - ENTRY AND EXIT POINTS OF THE FF THREAD ARE AT LEAST 1/4 INCH APART. THE
LAST LOOP OF THE DAISY CHAIN IS PULLED FAR ENOUGH INTO THE FLUTE TO POSITION IT
DIRECTLY BENEATH THE ENTRY AND EXIT POINTS OF THE FF THREAD.
2. RECOMMEND FIG 15-12C BE CHANGED TO SHOW EMPHASIS ON SEPARATION OF ENTRY AND EXIT
POINTS OF THE FF THREAD AND POSITIONING OF THE LAST LOOP.
N. J.A. MILLER, PRCS, ALSS LCPO, DEPLOYED//
BT

Figure 10.9-9: Category 1 Technical Publication Deficiency Report (Sample)

PRECEDENCE: PRIORITY
FM STRKFITRON TWENTY TWO
COMNAVAIRSYS COM PATUXENT RIVER MD//6.8//PMA-265
INFO COMNAVAIRFOR SAN DIEGO CA//JJJ//
COMSTRKFITWINGSPAC LEMOORE CA//JJJ//
FRC SAN DIEGO CA//
BT
UNCLAS //04790//
MSGID/GENADMIN/VFA-22//
SUBJ BTR F/A-18C TD PPC 117
REF/A/DOC/COMNAVAIRFORINST 4790.2/15FEB08//
AMPN/REF A IS NAVAL AVIATION MAINTENANCE PROGRAM
RMKS/1. VFA-22/PA3/09561
2. F/A-18C/PMA-265.
3. BTR VFA-22 CALENDAR DATE/SN
4. 00118/NAS LEMOORE CA
5. F/A-18C/96406/3103821-01
6. PPC 117
7. COMNAVAIRFOR 291630Z APR 04
8. N/A
9. TD PPC 117 IS MISSING FROM IN THE OPTIMIZED OMA BASELINE.
10. CHANGE BASELINE TO REFLECT PPC 117.
11. AZC K. HARLIN, LCPO, DSN 949-1111, COMM 409-998-1111
BT

Figure 10.9-10: Baseline Trouble Reports Message (Sample)

10.10 R} Technical Directive (TD) Compliance Program (NAMPSOP)

10.10.1 Introduction

10.10.1.1 The Technical Directive Compliance Program establishes policy, procedures, and responsibilities for the timely and accurate incorporation of TDs.

10.10.1.2 References:

- a. NAVAIRINST 5215.12A, Naval Air Systems Command Technical Directives System.
- b. NAVAIR 00-25-300, Naval Air Systems Command Technical Directives System.
- c. OPNAVINST 8000.16, Naval Ordnance Maintenance Management Program (NOMMP).
- d. NAVAIRINST 5216.11, Red Stripe Memorandum System.
- e. NATEC San Diego, Code 6.8.5.3, Weekly Summary for Issued TDs.
- f. NAVAIR 00-500C series, Directives Application List.
- g. NAVAIR 01-1B-50, USN/USMC Aircraft Weight and Balance Control.
- h. NALDA TDSA LIST06, INC/NINC Listing for Equipment.
- i. NALDA TDSA NAT01, TD Catalog Report.
- j. NALDA TDSA REP07, TD Compliance Report.
- k. NALDA TDSA LIST01, TD Applicability Listing.
- l. NAVAIR 00-25-100, Naval Air Systems Command Technical Manual Program.

10.10.2 Discussion

10.10.2.1 The TD Compliance Program is the only authorized medium for directing the modification or the accomplishment of one-time inspections of naval aircraft and is associated per NAVAIRINST 5215.12. TDs are documents issued by COMNAVAIRSYSCOM to provide technical information necessary to properly and systematically inspect or alter the configuration of aircraft, engines, systems, weapons, or equipment.

10.10.2.2 Naval aircraft and associated equipment and systems are to be maintained in a configuration which ensures safety and affordable material readiness. The TD System is an important element in achieving this objective and is also an integral part of the NAMP to ensure the following:

- a. Prevent death or injury to personnel.
- b. Prevent destruction/damage to equipment.
- c. Improve mission capability.

NOTE: The TD system is a multi-layer system requiring inputs, review, approval, and release from many sources.

10.10.2.3 TD Compliance

10.10.2.3.1 NAVAIR 00-25-300 shall be executed to direct, control, accomplish, and record modification and changes to naval aircraft, associated equipment, and systems procured by or for COMNAVAIRSYSCOM.

10.10.2.3.2 TDs are issued by configuration of aircraft, engines, systems, weapons, or equipment.

10.10.2.3.3 TDs consist of information that cannot be disseminated by revisions to technical manuals.

10.10.2.3.4 TD management is an all hands effort that when properly managed, assures fleet readiness, operational capability, and safety of personnel and material. All levels of maintenance and logistic support activities are directly responsible for compliance.

10.10.2.4 Approved TDs. Retrofit configuration changes to naval aviation systems including aircraft, engines, airborne weapons, airborne systems and system components, aircraft launch and recovery equipment, aviation SE and training systems shall be made only upon receipt of an approved TD, with the following exceptions:

- a. Operating commanders are authorized to take actions necessary to ensure safe operation of assigned aviation systems per this instruction and OPNAVINST 8000.16 for ordnance.
- b. ACC/TYCOMs may authorize one prototype installation of a proposed change.
- c. COMNAVAIRSYSCOM may approve a waiver in extraordinary situations to permit change installations to be accomplished using a preliminary TD.
- d. Record Purpose category TDs are authorized for installation prior to approval of the formal TD.
- e. Installation and removal of mission equipment does not require a TD.
- f. Release and installation of data files does not require a TD; however, this exclusion shall not apply to any data file that is produced as part of an ECP.

10.10.2.5 Issuing Authority

10.10.2.5.1 With ACC/TYCOM concurrence, all TDs will be issued by COMNAVAIRSYSCOM and PMAs who have been chartered to hold their own CCBs and have been certified to sign TDs.

10.10.2.5.2 ISSCs are authorized to prepare and issue bulletins, changes, interim changes, and RAMECs, except those which restrict flight operations. Proposed bulletins, prepared by originating activities other than the assigned ISSCs, will be reviewed by the ISSC and released by the PMA. Proposed RAMECs prepared by operating activities will be reviewed and may be sponsored by the appropriate ISSC.

NOTE: PMAs may authorize ISSCs/D-levels to issue bulletins which do not restrict flight operations by requiring compliance before further flight, preflight, turnaround, or daily, inspection, or within the next 10 flight hours.

10.10.2.6 Grounding TDs/Bulletins and Red Stripe Memorandums

10.10.2.6.1 All TDs which significantly impact fleet operations due to imposition of flight/operational restrictions or severe/unique impact on logistic support shall be processed as Grounding TDs/bulletins and shall be forwarded to the cognizant PMA and to the Assistant Commander for Logistics for action.

10.10.2.6.2 Approval of COMNAVAIRSYSCOM (AIR-00) and the appropriate concurrence of the CNO and the CMC are required before issuing Grounding TDs/bulletins. The CNO and CMC (as appropriate)

shall be advised of the cause and effect of the pending action using a Red Stripe memorandum per NAVAIRINST 5216.11.

NOTE: All Grounding TDs/bulletins shall be coordinated with ACC/TYCOMs prior to official release.

10.10.2.7 TDSA

10.10.2.7.1 The TDSA system provides on-line configuration status accounting for naval aircraft, engines, SE, maintenance trainers, and serial numbered weapon system components. The TDSA system gathers TD application and compliance data on individual equipment items and provides that data in the form of tailored automated reports, to operating and management activities per NAVAIR 00-25-300.

10.10.2.7.2 TDSA databases reside within the NALDA system. The data is accessible through the COMNAVAIRSYSCOM-maintained NALDA web site (<http://www.navair.navy.mil/logistics/tdsa>) and provides the following:

- a. INC/NINC status of TDs applicable to each trackable equipment item (airframes, engines, SE, and maintenance trainers) and INC data for TDs which apply to components/systems.

- b. Projected modification man-hour requirements and summary reports for modification management and budgeting.

10.10.2.7.3 TDSA databases are updated daily to reflect new TD compliance actions against applicable equipment items. The TDSA system provides for:

- a. Maximum use of existing data collection systems.

- b. Production of quarterly INC/NINC reports for reporting custodians and functional wings.

- c. Production of special reports (as required).

- d. Direct access to the databases by NALDA users.

- e. Daily database update.

- f. Annual purge of completed TD data from the active files of the active databases to the history files of the history databases.

10.10.2.7.4 The initial TD data in the TDSA databases are established by the COMNAVAIRSYSCOM Configuration Management (Logistics) Division (AIR-6.8.5.2) based on information contained in official documents, such as CCB change directives, implementation letters, and published TDs.

10.10.2.7.5 TDSA databases are updated daily to reflect TD compliance actions reported directly into TDSA by FRCs/NADEPs and by inter-service depot activities and contractors with direct TDSA access. Basic validation checks are performed on the transactions to ensure appropriate data have been entered in key fields. The transactions are then placed on a disk file by system (airframe, engine, SE) and a report is produced indicating valid and erroneous data elements. COMNAVAIRSYSCOM (AIR-6.8.5.2) controls the actual updating of the databases by listing the validated disk files and submitting the update jobs. Update reports are sent directly back to the compliance reporting activities for their correction.

10.10.2.7.6 The TDSA databases are updated daily to reflect TD compliance reports received from the fleet via SALTS and OOMA. Error reports on these compliance transactions are analyzed by COMNAVAIRSYSCOM (AIR-6.8.5.2) specialists and corrections are made based upon the best available naval aviation maintenance experience and judgment.

10.10.2.7.7 The history databases are established and maintained by COMNAVAIRSYSCOM (AIR-6.8.5.2) to reduce the volume of the active files and thereby reduce operating costs. These history files are updated annually by blocking those TD numbers that have been completed, such as no outstanding requirements. The first TD number with outstanding requirements and all subsequent TD numbers will be in the active file. Completed and canceled TDs remain in the active files until their number is reached in the annual block purge.

10.10.2.7.8 The cooperation and involvement of all users are required to keep TDSA databases up-to-date and TDSA reports accurate. Timely and accurate reporting of TD compliance actions will provide accurate INC/NINC status listings of all applicable TDs. Accurate and reliable TD listings provide ACC/TYCOMs, functional wings, reporting custodians, APMLs/LMs, and all management levels with valuable information with which to make informed decisions involving:

- a. Equipment configuration.
- b. Equipment assignment, deployment, transfer, or retirement.
- c. Workload projections.
- d. TD change kit requirements, excesses, and shortages.
- e. Status of change installation plans.
- f. Budgeting for the funds required to install outstanding TDs.
- g. Engineering analysis of incorporated changes.

10.10.2.7.9 Additional information and TDSA report listings are in NAVAIR 00-25-300.

10.10.3 Responsibilities

10.10.3.1 The ACC/TYCOM/SECA shall:

- a. Screen incoming TDs (including proposed TDs) to include the following:
 - (1) Safety of flight aspects.
 - (2) TD completeness and accuracy.
 - (3) Aircraft, equipment, trainers, spares, MAMs, and test bench installation application.
 - (4) Logistics support, including availability and source of parts and kits, SE requirements, and availability, and technical manuals.
 - (5) Impact of aircraft out of service time and O-level and I-level man-hour requirements.
 - (6) Detailed instructions.
 - (7) AVDLR impact.
 - (8) Configuration management, to include ensuring publications and drawings are updated if ECP or RAMEC.
 - (9) Validity of compliance time.

- b. Review and respond to all TD deviation requests (as required).
- c. Ensure effective configuration control by limiting incorporation of changes to those authorized by approved TDs.

NOTE: Activities shall not incorporate proposed TDs or RAMECs. A preliminary TD may be incorporated if approved by COMNAVAIRSYSCOM (AIR-6.8.2.2) and the ACC/TYCOM/SECA.

10.10.3.2 COMNAVAIRSYSCOM shall:

a. Release bulletins which restrict flight operations by requiring compliance prior to further flight, turnaround, daily inspection, or other compliance severely restricting fleet availability of aircraft. COMNAVAIRSYSCOM will also release all changes, interim changes and RAMECs.

b. Provide KINs and manage TD change kits and associated GFE (when required) to support TDs.

c. Assign APMLs/ISSCs (as required) to review and provide concurrence with TDSA database for applicable NAVAIR 00-500C reports on a semiannual basis.

d. Ensure logistic support is provided (as required) to operate, maintain, and repair the end item and included in the initial TD implementing action by the responsible COMNAVAIRSYSCOM activity. The elements of logistic support shall consist of:

- (1) Kits, material, and special installation tools.
- (2) New items of SE, including the furnishing of kits and SE change TDs.
- (3) New spares.
- (4) Repair parts.
- (5) GFE.
- (6) Trainers.
- (7) Changes and revisions to technical manuals and new manuals.
- (8) New and revised operational or maintenance program tapes.
- (9) Aircrew training.
- (10) Installation data package.
- (11) Spares and modification kits.
- (12) Trainer modification kits.
- (13) Maintenance training.
- (14) Preoperational support.

e. Establish and maintain basic cataloging data for approved COMNAVAIRSYSCOM TDs. This data shall be loaded/updated daily reflecting information received in official COMNAVAIRSYSCOM documents, for example, CCB Change Directives, implementation letters, and approved/published TDs.

- f. Correct errors in TDSA data annotated by reporting custodians on applicable reports and returned to COMNAVAIRSYSCOM (AIR-6.8.5.2) for corrective action and ensure proper documentation has been processed via the aviation 3M System.
- g. Maintain aircraft inventory data with info from OPNAV X-ray messages.
- h. Update the active databases daily to reflect TD compliance reports received from FRCs/NADEPs, inter-service activities, and contractors.
- i. Update the active databases daily to reflect TD compliance reports received from fleet units via SALTS and OOMA.
- j. Review and correct the SALTS/OOMA Transaction/Error Report daily. Notify cognizant ACC/TYCOMs of excessive error reporting.
- k. Maintain close liaison with TDSA users including ACC/TYCOMs, NALCOMIS OOMA/CMIS BLM, Type Wings, ISSC, reporting custodians, COMNAVAIRSYSCOM System Team members, NATEC, CNATTU and its units, NADEPs, FRCs, inter-service depot activities, defense plant representatives, and contract administrators.
- l. Provide training and assistance on the TDSA system to all users.

10.10.3.3 NATEC shall:

- a. Support APMLs/LMs as the LEM for technical data, including publications and TDs.
- b. Assign each TD a unique TD number; to include assignment of part, revision and amendment numbers.
- c. Ensure digital copies of TDs are formatted per the requirements posted on the NATEC web site.
- d. Maintain the only official COMNAVAIRSYSCOM master repository of active, superseded, completed, and cancelled TDs, including TDs issued by message.
- e. Provide/distribute copies of TDs (as required).
- f. Provide TD information input to maintain the Naval Logistics Library.
- g. Administer publication of Formal Change TDs.
- h. Process TPDRs concerning TDs.
- i. Provide address labels to COMNAVAIRSYSCOM, PMAs, ISSCs, and ACC/TYCOMs for distribution of RAMEC TDs by mail (when requested).
- j. Format and disseminate Weekly Summary of Issued Technical Directives (Figure 10.10-1).

NOTE: Weekly Summary of Issued TDs messages are available and authorized for download/use from the NATEC web site: (<https://mynatec.navair.navy.mil>).

- k. Coordinate publication and drawing package updates and releases/distribution.

10.10.3.4 Wings and COMFAIRs shall:

- a. Review proposed and newly issued TDs for parts availability, accuracy, format, and content. If the TD is deficient in any area, notify the applicable ACC/TYCOM/SECA of the discrepant area.
- b. Designate a TD Compliance Program Manager to be responsible for ensuring assigned activities, including deploying and deployed squadrons, receive required supply support.
- c. Conduct timely liaison with assigned IMA to provide necessary support to ensure parts and kits are received within required time frames.
- d. Ensure TDs are incorporated on a timely basis.
- e. Forward TD recommendations to the ACC/TYCOM/SECA.
- f. Conduct scheduled evaluation visits with subordinate activities to ensure TD compliance procedures are current and correct.
- g. Validate deviation requests before submitting to the ACC/TYCOM/SECA, for example, TD kits are unavailable, compliance time frame is unreasonable, and aircraft deployed to remote site.
- h. Assist operating activities in obtaining copies of TDs.

10.10.3.5 The MO shall:

- a. Ensure TD compliance.
- b. Designate, in writing via the MMP, the MMCO/civilian equivalent as the TD Compliance Program Manager.
- c. Develop local command procedures (as required) per [Appendix D](#).

NOTE: Aircraft and equipment are restricted from use if URGENT, IMMEDIATE, or ROUTINE TDs are not incorporated within the required compliance time unless a deviation has been approved by the ACC/TYCOM. O-level COs are authorized to apply a one-time contingency deviation for "ROUTINE" TDs designated for O-level compliance only. Contingency deviations shall not exceed the next compliance due time, for example, next phase. Contingency deviations shall be applied on a one-time basis to a specific aircraft, by BUNO, or specific serial numbered equipment when parts/kits are on order but not received or if flight operations will be disrupted. CO's contingency deviations require notification via naval message to Type Wing, ACC/TYCOM, and ISSC. Logbook entries shall be entered in the miscellaneous/history record of the aircraft logbook, AESR, MSR, or repair/rework/overhaul/exceedances section of the ASR, maintenance record of the EHR, or repair/rework/overhaul section of the SRC. Attach a copy of the deviation message to Parachute Record (OPNAV 4790/101), Seat Survival Kit Record (OPNAV 4790/137), Aircrew Systems Record (OPNAV 4790/138), Aircrew Personal Equipment Record (OPNAV 4790/159), or miscellaneous history record section of the SE Custody and Maintenance History Record (OPNAV 4790/51). A contingency deviation cannot be applied after any other deviation has been granted. Deviations beyond a contingency deviation require ACC/TYCOM approval.

10.10.3.6 The MMCO/civilian equivalent (TD Program Manager) shall:

NOTE: Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Ensure TD Program compliance requirements are adhered to and maintained within the maintenance department, and continuous TD verifications are performed to maintain TD Program effectiveness.

b. Designate, in writing via the MMP, a collateral duty TDPC. The TDPC shall be an E-6 or above or civilian equivalent assigned to Maintenance/Production Control.

c. Ensure TD applicability, tracking, accountability, documentation, and NALCOMIS Legacy/OOMA and Weight and Balance requirements (if applicable) are standardized throughout the Maintenance Department.

d. Ensure a MAF/WO is initiated for all TDs required by QA.

e. Review, sign and date NAVAIR 00-500C verification reports after TDPC, Logs and Records clerk and Maintenance Administration (Marine Corps) has completed verification.

f. Ensure completed/signed NAVAIR 00-500C reports are retained.

g. Submit a waiver/deviation request to the ACC/TYCOM/SECA (if applicable) via the chain of command, if parts/kits have been canceled, kit status is unavailable, or TD has exceeded compliance time for reasons beyond the activity's control. Ensure the following steps are followed when submitting deviation requests:

(1) Ensure TD is on hand to validate applicability.

(2) Contact the COMNAVAIRSYSCOM (AIR-6.8.3.2) Kit Manager to determine the availability of kits and parts (if applicable). Ensure requests include:

(a) TD type and number.

(b) TD title.

(c) Compliance time as annotated in the TD.

(d) TD category.

(e) BUNO/SERNO and PN.

(f) Document number and status or COMNAVAIRSYSCOM (AIR-6.8.3.2) Kit Manager's comments pertaining to status.

(g) Justification.

(h) Length of time waiver or deviation requested.

h. Ensure all TDs awaiting parts are reconciled at least weekly with Material Control.

i. Ensure the TD Routing and Tracking Sheet (Figures 10.10-2, 10.10-3 and 10.10-4) is signed/initialed by a QAR before a TD is logged in the appropriate logbook as NA.

j. Ensure supporting shore and ship supply officers are informed of aircraft configuration change(s) as a result of incorporation of TDs. The Supply Officer must be advised of any supply action as dictated by the TD; for example, removal of item of stock for modification or replacement with new stock to ensure support of new configuration.

10.10.3.7 The Material Control Officer shall, prior to a squadron's deployment, ensure all TD-related supplies ordered have been received or proper arrangements have been made with local supply activities either to cancel the requisitions or to provide for further shipment to the unit. Material Control, Maintenance

Control, TDPC, Logs and Records clerk, and Maintenance Administration (Marine Corps) shall jointly process a MOV listing all low priority requisitions. All valid TD requisitions shall be flagged for immediate shipment to the squadron. All material shall be shipped via traceable means. A cut-off date shall be established to terminate shipments of TDs, for example, 45-60 days prior to the return of the squadron. TD material shall be retained by station Supply and controlled by the Wing until the squadron returns. The IMA shall ship urgent TD kits to deployed units via traceable means. Routine TD kits shall be retained until the unit returns.

10.10.3.8 The Supply Officer shall ensure:

- a. Support is provided for new configurations (systems and components) as a result of TD incorporations.
- b. Stock is screened and purged (as required) by the TD and replacement item is stocked.
- c. Newly received components/shelf/stock/PUK components and applicable records are screened upon receipt of equipment/upon receipt of TDs. QA determines as applicable.
- d. Ensure OOMA Log Sets are updated as required.

10.10.3.9 TD Program Coordinator (TDPC) shall:

- a. Complete Maintenance Control PQS and attend appropriate CNATTU courses (Logs and Records, Quality Assurance, Maintenance Control and NALCOMIS/OOMA).
- b. In coordination with QA, provide oversight of CTPL TD control procedures for the department.
- c. Ensure Maintenance/Production Control issues applicable TD compliance MAF/WOs.
- d. Coordinate with the MMCO for timely incorporation of TDs.
- e. Maintain positive oversight. Coordinate validation of incorporation of applicable TDs by reviewing applicable TDSA reports with Logs and Records clerk and Maintenance Administration (Marine Corps).
- f. Review NATEC Weekly Summary for issued TD messages for applicable T/M/S and General Series TDs.

NOTE: Corrected Copy message type TDs shall not be taken for action. ACC/TYCOMs shall contact originating program offices to ensure requirements to amend/revise TDs are adhered to per NA 00-25-300

- g. Initiate MAF/WOs for all TDs as required by QA.
- h. Order on a MAF/VO required TD parts and kits for applicable BUNO/SERNO and submit to Material Control. Ensure that Material Control assigns DDSNs.
 - (1) When parts and kits are received, ensure they are screened for accuracy and completeness.
 - (2) Ensure parts and kits are properly packaged and identified by BUNO/SERNO (if applicable) until ready for incorporation on the aircraft or equipment.

NOTE: Do not over order/pre-order as this depletes stock.

- i. Ensure the TD Routing and Tracking Sheet (Figures 10.10-2, 10.10-3 and 10.10-4) is signed/initialed by a QAR before a TD is logged in the appropriate logbook as NA.

- j. Reconcile all TDs AWP DDSNs, at least weekly, with Material Control/Expeditor.
- k. Verify the NALCOMIS SA/A adds newly applicable TDs to the NALCOMIS TD configuration file.
- l. Ensure NALCOMIS activities initiate a down TD MAF/WO for equipment that has an outstanding TD past its compliance requirements. To sign off these MAF/WOs, manually change the completion date in the TD configuration file. After completion of all TD documentation, change the TD configuration file to reflect the original completion date of the TD.
- m. Retain all completed TD MAF/WOs until local NALCOMIS (Optimized NTCSS and Legacy) and TDSA databases are verified. MAF/WOs may be discarded after completion of verification.
- n. Validate incorporation of all applicable TDs. The combined review of the sources below will ensure all applicable TDs have been screened:
 - (1) NAVAIR 00-500C, Directives Application List (for T/M/S aircraft/engine/equipment).
 - (2) NALDA TDSA LIST01, TD Applicability Listing.
 - (3) NALDA TDSA LIST06, INC/NINC Listing for Equipment.
 - (4) NALDA TDSA NAT01, TD Catalog Report (with index codes B and D).
 - (5) NALDA TDSA NAT02, SE TD Listing (with index code B and D).
 - (6) NALDA TDSA REP07, TD Compliance Report.
 - (7) Weekly Summary for Issued Technical Directives ([Figure 10.10-1](#)).

10.10.3.9.1 NAVAIR 00-500C/NAT01/NAT02 report verifications shall be performed by reporting custodians per the following:

- a. Upon acceptance of aircraft/engines/equipment.
- b. By the direction and frequency as determined by the TD Program Manager.
- c. Prior to transfer of aircraft/engines/equipment.

10.10.3.9.1.1 Upon acceptance of aircraft/engines/equipment, ensure an initial verification and annotation of applicable NAVAIR TDSA report is completed, labeled “BASELINE”, and retained as a permanent document in the correlating aircraft historical file manila envelope of AESRs, or appropriate location as determined by the TD Program Manager until transfer of the aircraft/engine/equipment.

10.10.3.9.1.2 Perform subsequent applicable NAVAIR TDSA report verifications and label report “SUBSEQUENT”. Refer NA (administrative) amendment TDs to the “BASELINE” report. This will reduce redundant research and focus on the newly added or removed TDs. File/replace previous subsequent applicable NAVAIR TDSA report verifications with most recent subsequent applicable NAVAIR TDSA report verifications on top of the “BASELINE” report in the correlating aircraft historical file, manila envelope of AESRs or appropriate location as determined by the TD Program Manager.

10.10.3.9.1.3 Prior to transfer of aircraft/engines/equipment, ensure an applicable NAVAIR TDSA report verification is completed, labeled “TRANSFER” and filed in the correlating aircraft historical file, manila envelope of AESRs or appropriate location as determined by the TD Program Manager.

NOTES: Removal of TDs from applicable NAVAIR TDSA reports does not relieve reporting custodians of responsibility to verify or know status of these TDs. Cancelled, Completed (process of removing TDs from applicable NAVAIR TDSA reports) or Superseded TDs are not to be deleted from the equipment record until the item to which the TD was incorporated has been replaced with a new part number or has been removed due to obsolescence.

10.10.3.9.1.4 Download/print NAVAIR 00-500C reports:

a. From TDSA web site, <http://www.navair.navy.mil/logistics/tdsa>, ensure NAVAIR 00-500C report queries include specific T/M/S by four digit TEC. On the NALDA TDSA web site, select NA 00-500C report, select applicable T/M/S from the drop down menu, then enter the fourth digit of the TEC in the TEC series block to obtain specific T/M/S NAVAIR 00-500C reports.

b. Annotate TD status as INC, NINC, CANX, or NA , per line item, on NAVAIR 00-500C reports.

NOTE: Ensure NA annotations include reason for NA entry, for example, Not This BUNO, Not this Part Number, or administrative changes such as TCD.

c. Upon completion of NAVAIR 00-500C report verifications, ensure MMCO/Civilian Equivalent (TD Program Manager) reviews, signs and dates file copies.

10.10.3.9.2 Reconcile all TDs awaiting parts at least weekly with Material Control. When parts and kits are received, screen them for accuracy and completeness. Maintain parts and kits, properly packaged and identified by BUNO/SERNO (if applicable) until ready for incorporation on the aircraft or equipment. Maintenance Control/Production Control will initiate parts and kits request for TDs and submit to Material Control. Only Material Control will requisition parts and kits for TDs.

10.10.3.9.2.1 O-level activities shall ensure Logs and Records clerks and Maintenance Administration (Marine Corps) add all and newly applicable TDs are added to the NALCOMIS Legacy TD configuration file. (The Baseline manager pushes TDs to Optimized OMA activities).

NOTE: No MAF is required for TDs destined for I-level/D-level compliance but Logs and Records and Maintenance Administration (Marine Corps) shall track I-level/D-level TDs for incorporation prior to and upon completion of I-level repair or PMI/Depot rework. When adding I-level/D-level TDs for tracking and visibility, ensure affected BUNO/SERNOs are added. Annotate appropriate maintenance level and ensure NINC remarks identify compliance criteria.

10.10.3.9.2.2 I-level activities shall ensure Logs and Records clerks (I-level SA/DBA) and Maintenance Administration (Marine Corps) add all and newly applicable TDs to the NALCOMIS TD configuration file.

NOTE: No MAF is required for TDs destined for D-level compliance but Logs and Records clerks and Maintenance Administration (Marine Corps) shall track D-level TDs for incorporation prior to equipment being BCM/issued RFI to ensure TD compliance criteria is not exceeded.

10.10.3.9.2.3 Request assistance for TD program issues from appropriate ACC/TYCOM/SECA.

10.10.3.10 QA shall:

a. Oversee CTPL TD responsibilities in coordination with TDPC.

b. Ensure appropriate SME QAR/CDQARs review all TDs and the NATEC Weekly Summary for Issued TDs ([Figure 10.10-3](#)) from the CTPL for TD applicability:

(1) When QA determines a TD is N/A, to include administrative action only amendments/revisions not requiring additional maintenance, the QAR TD monitor or SME QAR/CDQAR shall annotate a detailed description of why the TD is N/A on the TD Routing and Tracking Sheet Part 1 ([Figure 10.10-2](#)).

(2) No MAF/WO shall be initiated for TDs QA determines as N/A. This process is equivalent to a QAR verifying the use of Status Code D. However, all required logbooks and associated records documentation on the Technical Directives (OPNAV 4790/24A), or equipment record whether documenting a basic, an amendment or a revision, shall be adhered to.

(3) O-level activities shall track outstanding I-level and D-level TDs for compliance per applicable TD compliance schedules, for example, next phase or induction to depot, but shall not initiate/use TD MAF/WOs to track outstanding I-level and D-level TDs.

c. Designate, in writing via the MMP, a QAR as the TD Compliance Program Monitor. This assignment does not preclude other QARs from monitoring this program, but places the overall responsibility with one individual.

10.10.3.11 The Central Technical Publications Librarian shall:

a. Upon receipt of a TD, request SME QAR/CDQAR review TD for applicability to assigned equipment. This may necessitate use of other work centers within the activity.

NOTE: Corrected Copy message type TDs shall not be taken for action. ACC/TYCOMs shall contact originating program offices to ensure requirements to amend/revise TDs per NA 00-25-300 are adhered to.

b. Once SME QAR/CDQAR determines the TD is applicable, the Central Technical Publications Librarian shall:

(1) Apply the control stamp (stamp shall include the activity, copy number, location, per NAVAIR 00-25-100, WP 019 00), and enter the date the TD was received to those TD copies received (Figure 10.10-5).

(2) Create records in the TPL program for the master copy and any additional copies located in work centers.

(3) Attach TD Routing and Tracking Sheet (Parts 1 and 2) (Figures 10.10-2, 10.10-3 and 10.10-4) and route to TDPC for continued processing.

c. Requisition all required TDs, revisions and amendments. NAVSUP Publication 485 provides applicable procedures. If copies of TDs cannot be obtained from NATEC, other squadrons, supporting FRCs or requisitioned via normal supply channels, O-level activities shall request TDs from cognizant Type Wing.

d. Obtain and provide additional copies of TDs as required by TDPC.

NOTE: Controlled copies of TDs related to ALSS shall be maintained in the ALSS work center.

10.10.3.11.1 The requirement to maintain paper TDs is optional. Master paper copies for historical TDs not on active TDSA reports are not required to be maintained by CTPL. However, the entry within the TPL program database shall not be destroyed. The location for historical TDs within the TPL database will be changed from actual location of paper copy to History. The retention of the entry in the TPL program database will ensure a digital historical copy is maintained.

NOTE: If paper copies are used, master copies shall be filed in binders by T/M/S, oldest on bottom to most current on top. Additional copies not issued to work centers shall be placed in a pending file.

10.10.3.11.2 Weekly Summary for Issued Technical Directives (Figure 10.10-1) is a Naval Message type report of TDs issued during previous week that is disseminated by NATEC to fleet activities. The Weekly

Summary for Issued TDs is also available on the NATEC web site (<https://mynatec.navair.navy.mil>), however, should activities fail to receive the Weekly Summary of Issued TDs message, contact the appropriate ACC/TYCOM/Type Wing/MALS/MAG.

10.10.3.11.2.1 Copies of TD summaries shall be annotated and maintained on file by each activity for a period of 6 months. The file of TD summaries may be in either paper or digital format.

10.10.3.11.2.2 TDs identified as applicable but not received shall be annotated on the summary and procured by the CTPL librarian and reviewed by SME QAR/CDQAR as identified on the TD Routing and Tracking Sheet (Figures 10.10-2, 10.10-3 and 10.10-4).

10.10.3.11.3 Upon return of W/C TD copies, update TPL program TD record(s) to reflect check in date(s). Change affected TD record(s) location from W/C to HIST to indicate TD returned and TD record moved to historical (dead) file. To relocate active TD record(s) to history (dead) file, go to technical manual search mode and with the search results on display, check the delete box(es) (far right column) for each W/C TD copy returned. Then check delete at the bottom of the column. This will relocate TD records from the active database to history (dead) file. Refer to NA 00-25-100 for detailed procedures.

NOTE: 1. TD records moved from the active database to history (dead) file will remain in history (dead) file for one year to ensure digital historical data is accessible.

2. TD history (dead) file records shall not be deleted by the CTPL from the history (dead) file. Deletion of TD history records will permanently remove TD record(s) and issue/return data from historical (dead) files.

10.10.3.12 Logs and Records and Maintenance Administration (Marine Corps) shall, upon receipt:

a. Add applicable TDs to the NALCOMIS TD configuration file.

(1) Legacy OMA activities shall ensure all applicable TDs, regardless of maintenance level are loaded into the legacy NALCOMIS OMA TD configuration file ensuring the appropriate maintenance level is identified, the affected BUNO/SERNO are added to the TD, and the NINC remarks field appropriately describes the TD compliance criteria.

(2) NALCOMIS Optimized activities shall use the manual process in CM Inventory Explorer for removing non-applicable and administrative TD tasks that do not apply which will remove the TD from the database and all reports.

NOTE: The above process will not work for AFBs or AFCs as they are written against a specific BUNO and can only be removed by the baseline manager.

b. Initiate a MAF/WO for all TDs as required by QA. Annotate the incorporation compliance time and event on the MAF/WO, for example, incorporation no later than next phase or not later than next 10 flight hours. If compliance time involves aircraft, engines, or components, annotate the current time plus (+) the compliance time to determine the maximum time until the aircraft or item is restricted from flight and use, for example, current flight hours 3984 + 10 flight hours = 3994 maximum aircraft/equipment hours when TD is due. In addition, annotate time compliance in the system reason block of the MAF (up to 25 characters), for example, AFB 566/NXT 224 DAY or AFC 771 RA/NXT PHZ. These steps will prevent missing the compliance interval.

NOTES: 1. SE tracked by lot will have a separate MAF initiated for each item of SE requiring a TD action. Activities are not authorized to issue a single MAF to incorporate a TD on an entire lot. If any of the items listed as part of the lot do not receive the required TD action, indicate, in pencil, the reason for noncompliance on the SE Custody and Maintenance History Record (OPNAV 4790/51) in Column B of Section VI (next to the S/N for that item). Once the TD has

been complied with, erase the reason for noncompliance from Section VI and record the item S/N in the remarks column of Section IV (TD Section). This will indicate the item was handled separately from the lot.

2. The TD compliance time shall be calculated from the DTG on message type TDs and date of formal TD

c. Make appropriate logbook entries. Some TDs may require multiple entries in the logbook and applicable records.

d. Add new TDs to TDSA List No. 02 if it is an AFC or AFB.

e. Complete logbook and record entries upon incorporation, and annotate Lists Nos. 02 and 04 (if applicable) or complete Technical Directives page entry requirements.

f. Upon receipt and transfer of all aircraft, engines, SE, components, AWSE, and ALSS:

(1) Compare TD configuration requirements against the appropriate Lists Nos. 02 and 04, Technical Directives (OPNAV 4790/24A), SE Custody and Maintenance History Record (OPNAV 4790/51), and component cards.

(2) Notify Maintenance Control/Production Control of any discrepancies discovered so that appropriate action may be taken and a MAF/WO issued (if necessary).

(3) Ensure all Lists Nos. 02 and 04, Technical Directives (OPNAV 4790/24A), SE Custody and Maintenance History Record (OPNAV 4790/51), and component history cards are maintained per this instruction and OPNAVINST 8000.16 as TD action occurs.

(4) Verify, upon receipt, new Lists Nos. 02, 04, and 04H, against the previous lists and take action on any discrepancies (Chapter 5). Return the updated copy of the new List No. 02 to COMNAVAIRSYSCOM (AIR-6.8.5.2) within 30 days of receipt.

(5) In coordination with TDPC review NAVAIR 00-500C series for T/M/S aircraft, NALDA TDSA NAT02, ALSS TD Listing (NAT04), and Weekly Summary for Issued Interim Technical Directives for TD deficiencies. If deficiencies are discovered, research the historical files for TD documentation. If documentation is missing, issue a MAF/WO to verify TD incorporation.

NOTE: Removal of TDs from NAVAIR 00-500C reports does not relieve reporting custodians of responsibility to verify or know status of these TDs. Canceled, Completed (process of removing TDs from NAVAIR 00-500C reports) or Superseded TDs are not to be deleted from the equipment record until the item to which the TD was incorporated has been replaced with a new part number or has been removed due to obsolescence.

10.10.3.13 IMA shall:

a. Screen LRCA (to include SE) with supply to verify TD applicability.

b. Use a TD Screening Request/Results (Figure 10.10-6) to document screening.

c. Perform the following actions if a supply asset requires IMA compliance:

(1) The component shall be held by Supply in a suspended status. The S/N(s) of the component(s) will be supplied to Production Control using a TD Screening Request/Results (Figure 10.10-6).

(2) Production Control, upon receipt of the completed Technical Directive Screening Request/Results (Figure 10.10-7), will update the TD Configuration File for those S/Ns listed on the form. Material Control will initiate TD MAFs for those affected components using a Supply JCN.

(3) Supply will maintain custody of the component(s) and hold them in suspension until the parts or kits are received.

(4) Upon notification from Production Control of receipt of the parts and kits, Supply will induct the component.

(5) Upon incorporation of the TD, the component and updated Log Set for OOMA will be returned to Supply via Production Control.

(6) Request assistance for TD program issues from the appropriate ACC/TYCOM/SECA.

10.10.3.14 Work Center supervisors shall:

a. Ensure TD Compliance Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record.

b. Incorporate TDs upon receipt of MAF/WOs, parts, and kits from Maintenance Control or Production Control.

c. Ensure all TDs are documented on a MAF/VO, per Chapter 15, upon completion. Use Transaction Codes:

(1) 41 - for compliance with no part number change or for non serialized components and O-level close out of SCIR impacted TD items (NALCOMIS Legacy).

(2) 47 - for compliance on all serialized components, regardless of whether there is a part number change. Use of Transaction Code 47 requires the (E) and (G) sections of the MAF to be completed.

d. Be aware of any TD that affects the work center and the TD Compliance interval. For IMA, this includes all components ordered and received from Supply.

e. Immediately inform Maintenance Control or Production Control and QA in the event a TD cannot be incorporated after it has been issued. If the TD requires additional parts, return TD MAF to Maintenance Control or Production Control.

f. Ensure all engines and engine components received are verified by Logs and Records and Maintenance Administration (Marine Corps) for TD configuration.

NOTE: It is the responsibility of the Work Center Supervisor to be aware of all TDs affecting equipment repaired by the work center and to validate the configuration of all equipment and components inducted for repair.

g. Ensure all other equipment, for example, ALSS, avionics, and SE, received for use, installation, or repair is verified for proper TD configuration.

10.10.3.15 The TD Program Monitor shall:

a. Attend appropriate CNATTU courses (Logs and Records, Quality Assurance, Maintenance Control, NALCOMIS/OOMA and CTPL).

- b. Ensure SME QAR/CDQARs review NATEC Weekly Summary for Issued TDs applicable to T/M/S.
 - c. Maintain/update TD Routing and Tracking sheets Part 1 and Part 2 (Figures 10.10-2, 10.10-3 and 10.10-4).
 - d. Ensure the TD Routing and Tracking Sheet Part 2 (Figure 10.10-4) is annotated with JCNs by Logs and Record Clerk Maintenance Administration (Marine Corps) to identify those BUNO/SERNO being tracked for compliance of applicable TDs. The TD compliance time shall be calculated from the DTG on message type TDs and date of formal TD.
- NOTE: No MAF is required for TDs destined for I-level/D-level compliance but Logs and Records (Maintenance Administration for Marine Corps) shall track I-level/D-level TDs for incorporation prior to and upon completion of I-level repair or PMI/Depot rework. When adding I-level/D-level TDs for tracking and visibility, ensure affected BUNO/SERNO are added. Annotate appropriate maintenance level and ensure NINC remarks identify compliance criteria.**
- e. As signed off TD MAF/WOs are received, verify that all Logs and Records and W&B entries required by NAVAIR 01-1B-50, have been made and initial columns IV, V, and VI of TD Routing and Tracking Sheet Part 2 (Figure 10.10-1).
 - f. Once completed, attach TD Routing and Tracking Sheets, Part 1 and Part 2 (Figures 10.10-2, 10.10-3 and 10.10-4) to master copy of the TD.
 - g. Perform audits using CSEC per paragraph 10.7.

10.10.4 Technical Directive (TD)

10.10.4.1 Technical Directive (TD) Preparation

All TDs shall be prepared and processed by the ISSC or PMA per NAVAIR 00-25-300 requirements.

10.10.4.2 PEO, Unmanned Aviation and Strike Weapons Program (U&W)

The PEO, U&W requires ordnance related TDs to be processed through the All Weapons Information System (AWIS) web site (<https://awis.navair.navy.mil/awis>) in a web based tool titled Technical Directive System (TDS). TDs processed via TDS can not be release without required electronically signed approvals (PMAs, ACC/TYCOM, and applicable fleet verifications).

10.10.4.3 Technical Directive (TD) Issuance

10.10.4.3.1 TDs may be issued via naval message/official letter type distributed via mail or local delivery. All message type TDs shall include all ACC/TYCOM (COMNAVAIRFOR, COMNAVAIRFORES, CNATRA, and COMNAVAIRSYSCOM AIR-5.0D) concurrence and amplifying remarks prior to official release.

10.10.4.3.2 TDs may be issued as:

- a. Basic
- b. Amendment

(1) Clarifies, corrects, adds to, deletes from, makes minor changes to, changes a target completion date for, or cancels an existing TD, revision, or amendment. Amendments are not complete TDs. They supplement existing TDs, identifying only the changes, additions, or deletions that need to be made.

(2) Shall not be issued to TDs when the size of the amendment will approximate the number of pages in the basic TD. In such cases, a revision should be issued in lieu of an amendment.

(3) TDs may be amended a maximum of three times. An exception to this rule is that a fourth amendment may be used to cancel a TD, a revision, or a previously issued amendment. A TD revision shall be required to change a TD that has been amended three times.

(4) Are identified numerically, for example, AVC 3500 Amendment 1.

(5) TDs may only be canceled by formally approved and issued TD amendments. When a cancellation amendment is issued to discontinue incorporations of a previously issued TD, it must state the required configuration of each item initially specified to be modified.

c. Revision. A Revision is a complete new edition of an existing TD. A revision is required when:

(1) The changes, additions, or deletions, involved are more than minor in nature.

(2) A change approximates the size of the current TD.

(3) Changing a TD that has been amended three times.

(4) Reactivating a TD that was completed and retired to the history file and reactivation by amendment is impractical.

NOTE: TD amendments and revisions shall be issued via the same media and to the same distribution/addressee list as the TD documents being amended/revised, for example, TDs issued by message shall be amended/revised by message.

d. Parts. Implementation of approved engineering changes occasionally requires preparation and issuance of TDs in parts when:

(1) The total directed action will be accomplished incrementally in separate distinct parts.

(2) Directed actions will be accomplished on different configurations of affected equipment, as approved detailed instructions/required change kits are developed and become available.

(3) Directed action involves separate reportable compliance actions at different maintenance levels.

(4) When a TD is to be issued in parts, the first or basic issuance of the TD will always be Part 1, even though it will not be identified as such in the TD number. Subsequent issuances shall be identified by Arabic numbers as Part 2, Part 3, etc., for example, F-18 AFC-217 Part 2. All parts shall have the same category and subject. Each part shall be a complete, stand-alone TD.

10.10.4.3.3 Once a TD is issued, it may only be changed by formally approved and issued TD amendments or TD revisions. Message type TDs that state Corrected Copy in the subject line or correct errors in the body of the message shall not be taken for action. ACC/TYCOM shall contact originating program offices to ensure adherence to NA 00-25-300 requirements to amend/revise message type TDs.

NOTE: Use of other communication vehicles, official or unofficial, to change or cancel a published/issued TD is not authorized.

10.10.4.4 Technical Directive (TD) Categories

10.10.4.4.1 TD Categories are important to the Material Control centers because they determine priority on which the kit/parts may be ordered.

10.10.4.4.2 TD categories are as follows:

a. Immediate Action. The Immediate Action category is assigned when unsafe conditions exist which, if uncorrected, could result in fatal or serious injury to personnel, or extensive damage to or destruction of valuable property; and such conditions embody risks which are calculated to be unacceptable. The urgency of these TDs requires immediate action to ground aircraft, prevent launch of missiles, or deny the use of related SE or munitions. Whenever possible, methods for correcting the unsafe condition are included in the Immediate Action TD. Assignment of this category shall be justified by incident, accident, hazard, or similar reports, and must be concurred with by COMNAVAIRFOR/Marine Forces.

b. Urgent Action. The Urgent Action category is assigned when factors of combat necessity, potential hazardous conditions which could result in personal injury or damage to valuable property, or unacceptable reductions in operational readiness exist; and such conditions, if uncorrected, would compromise safety or embody risks which are calculated to be acceptable within defined time/performance limits. These conditions are less serious than those for which the Immediate Action category would be assigned. Urgent Action TDs shall require compliance within specified time limits. If compliance is not accomplished by expiration of the specified time limit, action will be required to ground aircraft, discontinue use of air-launched weapons, prevent launch of missiles, discontinue operation of ground communications, electronic or meteorological equipment, or discontinue use of SE, personnel equipment, materials, or munitions.

c. Routine Action. The Routine Action category will be assigned whenever the urgency of the situation does not warrant assignment of Immediate or Urgent Action categories and the assignment of Record Purpose would be inappropriate. The Routine Action category shall not be assigned to Interim Change TDs or Bulletins. Assignment of Routine Action is appropriate when conditions exist which embody degrees of risk calculated to be acceptable within broad time limits. Governing factors include equipment or procedural deficiencies of a material, mechanical, operational, or tactical nature, the uncorrected existence of which could:

- (1) Constitute a hazard through prolonged use.
- (2) Have a negative affect on operational effectiveness or readiness.
- (3) Reduce tactical utility or supportability.
- (4) Reduce operational service life.

NOTE: Routine Action TDs are issued to authorize retrofit changes and provide detailed instructions for installing those changes. When attrition changes require a TD they shall be assigned the Routine Action category.

d. Record Purpose. The Record Purpose category is assigned to Formal Change TDs issued to document configuration changes that have been incorporated in all affected equipment by the change designer/originator before the TD is issued. The primary purpose of the Record Purpose TD is to provide the official record of an engineering change for TDSA purposes. Some additional criteria governing use of Record Purpose TDs are:

- (1) TDs that require forced retrofit or changes to spares in the inventory may not be assigned the Record Purpose category.
- (2) TDs issued to supersede and formalize Interim Change TDs may not be Record Purpose.
- (3) Bulletins, Interim Change TDs, RAMECs, and other message TDs may not be assigned the Record Purpose category.

(4) The Record Purpose category may be assigned only to Formal Change TDs and only when the period for change incorporation in all affected systems is 12 months or less.

NOTE: When the incorporation period will exceed 12 months, a Routine Action TD in data package format shall be prepared instead of a Record Purpose TD and the TD shall be issued prior to the beginning of the installation program instead of at the end.

(5) Record Purpose TDs may be used to support changes applicable only to FMS, on an exception basis, when approved by COMNAVAIRSYSCOM (AIR-6.8.5.2).

NOTE: LESs or other engineering advisories shall not be used to incorporate configuration changes.

10.10.4.5 Technical Directive (TD) Types

10.10.4.5.1 There are four types of TDs: Bulletins, Interim Changes, Formal Changes, and RAMECs.

10.10.4.5.2 The purpose and use of TD types are as follows:

a. Bulletins. A Bulletin is a TD which directs a one-time inspection to determine if a given condition exists and specifies what action shall be taken if the condition is found. It may contain instructions for corrective action using approved repair procedures, provided no change in configuration is involved; or it may require issuance of a change TD to remedy a deficiency. Bulletins are normally issued as Naval Messages but may be issued by letter (in message format) when enclosures are required. Bulletins shall not be used in lieu of technical manual changes, for example, to establish continuing maintenance/inspection requirements. When required and appropriate, a Bulletin may include direction for issuance of a RAC or for creation of a local MRC to establish continuing inspection requirements for the same action. The Bulletin process and example Bulletin TDs are in NAVAIR 00-25-300, Appendix C.

(1) Categories. Bulletins are issued via naval message and categorized as either Immediate or Urgent.

(2) Effectivity. The period of effectivity for bulletins is self rescinding. All bulletins shall contain a self rescinding date effective on the last day of the 6 month period (30 June or 31 December) in which the compliance statement requires completion of the inspection.

NOTE: Bulletin TDs shall not be used to effect technical manual changes, for example, to establish continuing inspection requirements. Such changes shall be made via the established technical manual updating process.

b. Interim Change. Urgency sometimes requires change incorporations be initiated without delay, following CCB approval. In such cases, proposed changes are submitted to COMNAVAIRSYSCOM in TD format and, after approval, are disseminated immediately by message. These message TDs are designated Interim Changes, for example, IAFC and IAVC, and are filed in publications libraries in the same manner as Formal Change TDs. When an Interim Change TD is issued, a formal ECP shall be obtained within 180 days to permit thorough review of all engineering and logistic elements of the change. Then, after ECP review and approval, a Formal Change TD shall be issued to supersede the Interim Change.

(1) Categories. Interim changes are categorized as either Immediate or Urgent.

(2) Change Kit. Normally, the activity preparing the TD will also develop and provide necessary change kits required to accomplish the TD.

(3) Effectivity. The period of effectivity for all interim changes shall be explicitly stated to be in effect until they are superseded by issuance of a formal change. The action of Supersedure by issuance of a formal change is required in all cases.

c. Formal Change. A Formal Change TD is the primary COMNAVAIRSYSCOM document for implementing a configuration change. It is normally a formally published (hard copy) document. A Formal Change TD contains instructions and information which direct accomplishment and recording of a material change, repositioning, modification, or alteration in the characteristics of a system. It shall be used to direct that parts or material be added, removed, altered, relocated, or changed from an existing configuration. A Formal Change TD is always identified by title as an AFC, AVC, etc. Formal Change TDs are prepared per NAVAIR 00-25-300.

(1) Categories. Formal changes are categorized as Immediate, Urgent, Routine, and Record Purpose based upon the importance and urgency of accomplishing the work involved.

(2) Change Kit. Normally, the activity preparing the TD will also develop and provide any necessary change kits required to accomplish the TD.

(3) Verification. ISSC/PMA shall ensure prerequisites to verification are complete as follows:

(a) KINs have been assigned by COMNAVAIRSYSCOM (AIR-6.8.3.2).

(b) Verification kits are complete and ready for delivery.

(c) Validation has been completed and endorsed by the applicable ISSC Engineering Department.

(d) The TD is complete and within the scope of the approved ECP.

(4) Effectivity. The period of effectivity for formal changes shall be established as follows:

(a) Immediate and Record Purpose only changes shall have a maximum rescission interval of 2 years.

(b) Urgent changes shall have a maximum rescission interval of 5 years.

(c) Routine changes shall have a maximum rescission interval of 6 years.

d. RAMECs. The concept of the RAMEC program is fleet self-help. Procedures are designed so that minor engineering changes may be processed expeditiously and, after approval, incorporated promptly by O-level/IMAs to ensure commonality of configuration throughout the inventory. D-level incorporation is not authorized except in the case of RAMECs for SE (used at both the I-level and D-level.). Changes approved per RAMEC procedures are issued as numbered TDs. Proposed RAMECs are initiated by fleet activities, ISSCs, or engineering activities in response to requirements identified by fleet activities.

NOTE: PMAs, COMNAVAIRSYSCOM HQ, or contractors may not sponsor or initiate RAMECs.

(1) RAMECs shall not be used to affect retrofit of, or to satisfy logistics requirements resulting from, Class II production changes. Fleet activities must request RAMEC sponsorship from their ACCs prior to prototyping one item. After successfully prototyping a prospective RAMEC change, the proposed RAMEC TD will be prepared and forwarded to the sponsoring ACC for processing. COMNAVAIRSYSCOM ISSCs may initiate and sponsor proposed RAMECs on items for with primary cognizance, provided they accept responsibility for coordinating related fleet support and obtaining concurrences from affected ACC/TYCOM.

(2) RAMECs are issued by naval messages or letters (in message format) as change TDs, for example, AFCs, AVCs, within seven working days of CCB approval. Drawings and publications impacted

by RAMECs are updated to provide for subsequent parts procurement and maintenance instructions for the modified aircraft, systems, or components.

(3) When a RAMEC is modifying an item of supply, re-identification of the modified item may be required, such as new part number. When re-identification is required, the ISSC will obtain new part numbers from contractors when the master drawings are held by the contractor, or assign a new ISSC part number. The following guidelines apply:

(a) When master drawings are held by a contractor who agrees to update the drawings to reflect the proposed design change, the ISSC shall obtain the estimated cost to update the drawings from the contractor and include them in the proposed RAMEC.

(b) When master drawings cannot be located or when master drawings are held by a contractor who refuses to modify them to reflect the design change, the RAMEC may be forwarded to COMNAVAIR SYSCOM HQ for approval only if the cognizant ISSC is prepared to create new drawings and to serve as the production source for the modified parts. In these cases, the ISSC shall provide cost estimates for creating the new drawings.

(4) Use of the RAMEC TD is restricted by its special application. To receive COMNAVAIR-SYSCOM approval, a RAMEC must:

(a) Be confined to a simple change that can be easily and rapidly incorporated, and that does not require extensive technical review or work effort.

(b) Be authorized for incorporation by O-level or I-level maintenance activities, including regular contractor maintenance support at those levels. D-level incorporation is not authorized except in the case of RAMECs for SE at the I-level and D-level.

NOTE: RAMECs will not normally be incorporated by D-level maintenance activities. However, if a TD is being incorporated by a Depot activity and an unincorporated RAMEC is a prerequisite, the RAMEC may be incorporated by the Depot.

(c) Require no more than 8 maintenance man-hours per installation to accomplish.

(d) Use only standard stock items/raw materials, source-coded items that may be manufactured by the cognizant FRC. This material should be readily obtainable by a requesting activity through normal supply system requisitioning procedures. The total cost of the material required should not exceed \$1,500 per installation. For the purposes of satisfying this requirement, items procured for specific applications and local open-purchase items are not considered standard stock items.

(e) Be complied with as directed by the applicable TD, but not later than the next calendar/phase inspection requiring access to the area/zone containing the item(s) to be changed, or next induction of the item(s) into an I-level maintenance activity.

(f) Be coordinated with, and agreed to by, each affected ACC/TYCOM, PMA, and ISSC. Coordinated with, and agreed to, by CNATTU activities when trainers under their cognizance are affected.

(g) Provide for modification of spares and trainers (if affected).

(h) Not require the development, fabrication, procurement, or stocking of retrofit kits.

(i) Not be used to amend or supplement an existing Interim or Formal TD.

(j) Not generate a requirement for additional or new SE.

(k) Not generate a change to O-level SE.

(l) Not affect operational or avionics automatic test equipment or missile subsystem test sets, or the software programs/tapes associated therewith.

(m) Not require changes to general-purpose electronic test equipment under the technical/procurement cognizance of the SPAWARSYSCEN.

(n) Not generate a requirement for new technical manuals.

(o) Not apply to items having an SM&R code with D in the fourth position, excepting SE items.

(p) Not apply to nonconsumable items procured and managed by another service. (Formal ECPs are required to change such items). Further details concerning the preparation and processing of RAMEC TDs are in NAVAIR 00-25-300.

(5) Categories. RAMECs are categorized as Immediate, Urgent, or Routine.

(6) RAMECs shall only be authorized for O-level or I-level implementation, including regular contractor maintenance support activities.

(7) Review. RAMECs require review by all affected ACCs prior to release. The RAMEC will be forwarded to the ACCs requesting concurrence/non-concurrence of the need, applicability, and technical approach.

(8) Verification. RAMEC verification will be requested of ACCs prior to release. ACCs will determine the need for verification and, when required, will assign the task to an activity of the same maintenance level as that proposed for the compliance in the TD.

(9) Effectivity. RAMECs shall have a maximum rescission interval of 5 years after date of issue.

NOTE: FRC implementation is not authorized except in the case of RAMECs for SE used at both I-level and D-level.

10.10.4.6 Technical Directive (TD) Titles, Codes, and Numbering

10.10.4.6.1 Each TD is assigned a title by the APML/LM. TD titles are assigned that appropriately reflect the object or purpose of the TDs. For example, a change or a RAMEC affecting an airframe or integral airframe component would be given the title "Airframe Change" (AFC). A similar Interim Change would be titled, "Interim Airframe Change" (IAFC) and a Bulletin, "Airframe Bulletin" (AFB). TD titles are represented by TD codes (TDCs) in the aviation 3M and TDSA systems. For example, all AFCs, including IAFCs, are represented by TDC 50 and all AFBs by TDC 74. Associated title abbreviations and TDCs are shown in TDC number sequence in TD Code Numbers (Appendix E). Additional information for TD titles is in NAVAIR 00-25-300.

10.10.4.6.2 NATEC assigns each TD a unique TD number; this includes assignment of part, revision, and amendment numbers. Change TD numbers are assigned immediately following CCB change approval. Bulletin TD numbers are assigned prior to release for compliance. TDs are either numbered sequentially by title, for example, Avionics Change (AVC) 3500, or sequentially by title within specified type/model of equipment, for example, F-18 Airframe Change (AFC) 100).

10.10.4.6.3 When a TD is applicable to a foreign country under an FMS program, the two-letter country organization and code (DOD 55105.38-M), is placed after the TD number, for example, P-3 AFC 002 (JA) for Japan.

10.10.4.6.4 Amendments are identified numerically and revisions are identified alphabetically, for example, AVC 3500 Amendment 1 or AVC 3500 Revision A. The approval authority for TD amendments and revisions is normally the same as for the basic TD.

NOTE: TD amendment/revision preparers shall obtain amendment number/revision alphabetical character assignments from NATEC to ensure number/alpha character is correct and to avoid duplication.

10.10.4.7 Technical Directive (TD) Change Validation

Validation is an engineering process by which the originator accomplishes all tasks required by a proposed change to ensure the modified items function as intended. Validation is usually conducted at an organic depot or contractor facility, but may be conducted at an operational site as directed by the APML/LM.

10.10.4.8 Technical Directive (TD) Verification

10.10.4.8.1 Verification is the process for determining the accuracy and adequacy of a proposed TD and reporting results to the preparing activity. Verification is the actual installation of change kits, incorporation of changes or performance of inspections by personnel of the prescribed skill, using a proposed TD, SE and special tools available at, and in an environment comparable to, the average service facilities of the lowest authorized compliance maintenance level. Verification also includes the administrative review of the proposed TD by the appropriate personnel at COMNAVAIRSYSCOM and cognizant ISSC. Successful verifications are authorized installations.

10.10.4.8.1.2 TDs shall be verified prior to issuance. TD verification shall be assigned a sufficiently high priority to enable completion of the required action within the prescribed time limit.

10.10.4.8.1.3 Verifications shall include the procedures associated with gaining access to the areas/equipment involved and performing tests required to ensure satisfactory operation after completion.

10.10.4.8.1.4 Verification of ordnance related TDs shall be recorded in the Ordnance TDS.

10.10.4.8.1.5 Verification of power plant and component changes shall include interface, clearance, and fit checks (as necessary) to ensure compatibility with installation and with support systems, for example, verification of power plant changes may require engine buildup and installation in an aircraft and/or compatibility checks with SE and reusable shipping containers when external dimensions are changed. Verification of power plant TDs on multi-engine platforms may require verification on all installed engines due to differing access/compatibility problems among installed engines.

10.10.4.8.1.6 Verification of software TDs will normally be performed by designated software support activities. Software verification at a Navy user level installation activity (if required) will normally be limited to verifying proper installation and operation of the software.

10.10.4.8.1.7 TDs applicable to more than one aircraft/equipment T/M/S shall be verified on each affected aircraft/equipment T/M/S, unless waived by Assistant Commander for Logistics and Industrial Operations COMNAVAIRSYSCOM (AIR-6.0). TDs requiring compliance action at more than one maintenance level shall be verified at all maintenance levels involved.

10.10.4.8.1.8 Organic D-level verification plans shall be coordinated with COMNAVAIRSYSCOM (AIR-6.0). Verifications performed by O-level or I-level maintenance activities shall be coordinated through applicable ACC/TYCOM.

10.10.4.8.1.9 Verifying activities shall report results to the APML/LM. If a verifying activity determines a TD to be unsatisfactory or deficient in any respect, that activity shall report difficulties and request instructions from the APML/LM via official correspondence.

10.10.4.8.1.10 Verifying activities shall evaluate costs to the installing activity for materials required incident to TD compliance. If these costs are projected to exceed \$1,000 per squadron, the verifying activity shall identify the excess costs in the verification report to the cognizant APML/LM who will determine whether to restructure or cancel the TD.

10.10.4.8.1.11 When a proposed amendment invalidates the verification performed on the basic TD, a new verification shall be performed.

10.10.4.8.1.12 When a proposed revision invalidates the verification performed on the original TD or previously issued revision or amendment thereto, the proposed revision shall have a new verification performed.

10.10.4.8.2 The following are exceptions to the verification requirement:

- a. Verification is not required for Record Purpose TDs.
- b. Verification is not required for TDs prepared in data package format when installations are performed entirely by the design activity.
- c. Verification of RAMECs may be waived by ACC/TYCOM.
- d. Assistant Commander for Logistics and Industrial Operations (COMNAVAIRSYSCOM (AIR-6.0)), or designee may waive verification of interim, formal and bulletin TDs. Record Purpose changes and those which are originated by a depot and installed by the same depot or depot field team or are originated by a contractor and installed by the same contractor or Contractor Field Team using an installation data package, are not required to be verified.
- e. During critical or urgent operational conditions, when the requirement for verified accuracy is outweighed by the urgent need for the change, TD verification may be waived by Assistant Commander for Logistics and Industrial Operations (COMNAVAIRSYSCOM (AIR-6.0)).

10.10.4.9 Concurrent Validation/Verification (VAL/VER)

The APML/LM may authorize accomplishment of verification concurrent with validation when the change is relatively uncomplicated. When combined VAL/VER is performed, each functional and responsible activity must be clearly defined. Engineering personnel responsible for validation shall not be involved with, or assist in, the verification. This is particularly important when the VAL/VER is performed by O-level or IMAs. Concurrent VAL/VER performed by contractors, or by the Navy with contractor participation, shall not be authorized by an APML/LM without the concurrence of the Assistant Commander for Logistics and Industrial Operations (COMNAVAIRSYSCOM (AIR-6.0)).

10.10.4.10 Technical Directive (TD) Compliance

10.10.4.10.1 Approved TDs (except Record Purpose TDs) are COMNAVAIRSYCOM directives to designated maintenance activities to comply with TD requirements within prescribed time periods per

prescribed schedules. Each TD shall be complied with and reported as required by the TD, this instruction, and OPNAVINST 8000.16 for weapons.

10.10.4.10.2 All TDs are issued for compliance at designated maintenance level(s); O-level, I-level/D-level. D-level encompasses nondepot government engineering/industrial activities, such as laboratories and ISSCs. TDs that route all affected items back to the manufacturer for modification shall cite "Contractor" as the compliance maintenance level.

10.10.4.10.3 Compliance maintenance levels are assigned by the APML/LM, in consultation with ACCs/TYCOMs, ISSCs, and using commands; and are approved by appropriate COMNAVAIRSYSCOM TD approval authorities. Maintenance level assignment is based on a number of factors. These factors include personnel skill level, special tools, SE, facilities, man-hours required, and SM&R codes of affected equipment. The designation of O-level or I-level compliance does not prohibit accomplishment by I-level or D-level maintenance activities. However, designation of D-level compliance does prohibit accomplishment by O-level or I-level maintenance activities unless specific authority is granted by COMNAVAIRSYSCOM.

NOTE: The TD compliance time shall be calculated from the DTG on Message Type TDs and date of formal TD.

10.10.4.10.3.1 O-level/I-level compliance normally will be assigned when:

- a. TDs are immediate, urgent, or safety.
- b. Affected equipment will be out-of-service or down for a minimum amount of time.
- c. Relatively few man-hours are required.
- d. Actions to be performed are within the concept and capability of the O-level or I-level maintenance.

NOTES: 1. O-level or I-level compliance normally will not be assigned when equipment out-of-service time will exceed 8 hours or if more than 10 man-hours per compliance action will be required.

2. All TDs, except Bulletins, require prior concurrence from affected ACC/TYCOM to assign O-level or I-level compliance.

10.10.4.10.3.2 D-level normally will be assigned when:

- a. TDs are routine;
- b. Affected equipment will be out of service for a relatively long period of time;
- c. A large number of man-hours are required;
- d. Skills, tools, SE, or facilities are required that are not routinely available at lower maintenance levels.

NOTE: 1. D-level TD compliances may be accomplished by organic depots, by commercial contractor, or by a combination of both. They are usually accomplished at depot facilities concurrent with maintenance/repair or affected equipment/as drive-in modifications.

2. When circumstances require, compliance can also be accomplished at operational facilities by depot field teams. However, use of operational facilities or other fleet resources must be concurred in by the applicable ACC/TYCOM.

10.10.4.10.4 Man-hours required, in addition to accomplishing the directed modification, will include work tasks such as gaining access to perform the work, and post-modification operational checks.

10.10.4.11 Target Completion Dates (TCDs)

10.10.4.11.1 All TDs, except Interim Changes, are assigned TCDs. This date represents a future point in time when compliance requirements are expected to be complete.

10.10.4.11.2 Its The purpose of TCDs is to initiate a review of TD status. The review shall be performed 90 days prior to TCDs by the cognizant APML/LM and COMNAVAIRSYSCOM (AIR-6.8.5.2).

10.10.4.11.3 When TD compliance requirements remain outstanding, TCDs shall be formally extended by TD amendments or revisions.

10.10.4.11.4 Unless extended, Bulletin TDs shall be automatically completed and moved to the inactive status at their assigned TCDs except for AFBs and PPBs, which depend on outstanding requirements.

10.10.4.11.5 Change TDs shall be formally completed and moved to the inactive status when TCDs expire and when status accounting records show no noncompliances outstanding.

10.10.4.11.6 When status accounting data is inadequate or unreliable, Change TDs shall be declared completed at the judgment of COMNAVAIRSYSCOM (AIR-6.8.5.2) and the cognizant APML/LM after there has been no compliance activity and no kit demand for at least 1 year.

10.10.4.11.7 At TD completion, kits/materials for Change TDs are identified for reclamation/disposal.

10.10.4.11.8 Occasionally, outstanding non-compliances will arise for TDs that have been completed or have passed their TCDs. A TD does not have to be extended or reactivated to be complied with. Kits should be ordered, COMNAVAIRSYSCOM (AIR-6.8.5.2) should issue kits (on demand), and compliance actions should be performed, regardless of whether a TD is in active or completed status. If no kits are in stock, COMNAVAIRSYSCOM (AIR-6.8.5.2) shall notify the cognizant APML/LM.

10.10.4.11.9 Completed TDs shall not be discarded. They shall be retained as a permanent record of system configuration by NATEC and at the designated compliance maintenance level.

10.10.4.11.10 TCDs shall be assigned as the last day of the 6-month period when compliances are scheduled to be completed and shall be either 30 June or 31 December.

10.10.4.11.11 Recommended time frames for TCDs for TDs are:

- a. Immediate Action - 2 years
- b. Urgent Action -3 years
- c. Routine Action - 8 years

10.10.4.11.12 TCDs for Bulletins will be 12-18 months after issuance.

10.10.4.11.13 TCDs for Record Purpose TDs shall be 18 months or less form date of CCB approval.

10.10.4.12 Technical Directive (TD) Developmental Stages

10.10.4.12.1 During preparation, validation, verification, approval and publication, TDs pass through a number of developmental stages. The 4 most commonly used developmental stages are as follows:

a. Draft - Applied to initial versions of TD documents that pertain to changes that are validated but are not verified. Draft TDs shall be submitted for information, review/comment. Draft TDs shall not be distributed to activities outside COMNAVAIRSYSCOM without approval of the cognizant APML/LM.

b. Proposed - Applied to bulletins, interim change TDs and RAMECs and shall be included in the TD subject line while the TD is pending review and approval. Distribution of Proposed TDs shall be strictly controlled by the APML/LM. Distribution of Proposed TDs for verification should include ACC/TYCOMs, designated verifying activities, COMNAVAIRSYSCOM (AIR 6.8.5.2), NAVICP, and cognizant ISSC.

c. Preliminary - Applied to Formal Change TDs only. The term "Preliminary" denotes that a Formal Change TD has been verified but has not yet been posted to the NATEC web site or has not yet been bar coded and distributed. A Preliminary TD shall not be used in lieu of an approved TD to incorporate a change or to deliver kits unless a waiver is granted by COMNAVAIRSYSCOM (AIR-6.0). Distribution of Preliminary TDs shall be strictly controlled by the APML/LM.

d. Approved TDs - TDs are publications and are approved when they are signed by the COMNAVAIRSYSCOM TD approval authority and posted to the NATEC web site or bar coded and formally distributed by NATEC. NATEC electronic publication media satisfies bar-coding and formal publishing requirements. Interim Change, Bulletin and RAMEC TDs are approved when they are released for compliance.

NOTE: Proposed/Preliminary TDs shall not be incorporated by fleet activities unless directed by applicable ACC/TYCOM.

10.10.4.13 Technical Directive (TD) Approval and Publication

10.10.4.13.1 Proposed TDs, for example, validation/verification TDs, shall be updated by TD preparers to incorporate verification comments for submission to the cognizant APML/LM as preliminary TDs.

10.10.4.13.2 APML/LMs shall:

a. Review the Master TDs prior to presenting them to the approval authority for signature. This review shall include the availability of the resources necessary for TD compliance, for example, change kits, GFE, spares, and the delivery schedules and status of logistics resources necessary for system support after TD installation. The APML/LM will complete a TD Logistics Support Checklist (NAVAIR 00-25-300) documenting this review and include it with each Formal and Interim Change type TD submitted to the TD approval authority for signature.

NOTE: 1. The TD Logistics Support Checklist is not used for RAMEC, Bulletin, or Software TDs.

2. TDs shall be signed/approved either by COMNAVAIRSYSCOM (AIR-6.0) or individuals with signature authority granted by COMNAVAIRSYSCOM (AIR-6.0). TDs affecting common equipment shall be coordinated via the common PMA, with all affected programs. Immediate Action category TDs and TDs involving aircraft grounding or flight restrictions shall require concurrence by CNO/CMC and approved by COMNAVAIRSYSCOM (AIR-00) prior to release.

b. Ensure appropriate issue dates and TCDs are assigned to Formal Change TDs before they are forwarded to NATEC for publication. Formal Change TD issue dates shall be post-dated from date of signature to allow for printing and distribution lead-time. Lead-time is normally 6 weeks. This date shall also represent the time when sufficient change kits will be available to sustain the incorporation schedule, or when the new system configuration is expected to be logistically supportable (either by normal or interim support), whichever is later. Formal Change TDs issued to supersede Interim Change TDs shall be assigned issue dates the same as the dates the Interim Change TDs were issued.

c. Ensure appropriate TCDs are assigned before releasing RAMEC and Bulletin TDs for transmission. Interim Change TDs are not assigned TCDs.

d. Ensure a digital copy of both Formal and Message TDs are formatted per the requirements posted on the NATEC web site (<https://mynatec.navair.navy.mil>) and are forwarded to NATEC for publication/electronic posting.

10.10.4.14 Message Type Technical Directives (TDs)

10.10.4.14.1 Message type TDs are approved when they complete the approval process, and shall include all ACC/TYCOMs concurrence/amplifying remarks paragraphs (Figure 10.10-7) and are released for compliance.

NOTE: Corrected Copy message type TDs that state Corrected Copy in the subject line, or correct errors in the body of the message shall not be taken for action. ACC/TYCOM shall contact originating program offices to ensure requirements to amend/revise TDs are adhered to per NAVAIR 00-25-300.

10.10.4.14.2 Only one message shall be released per TD (applies to all TDs; Basic, Amendments/Revisions) and include a final paragraph that identifies all ACC/TYCOM concurrence and amplifying remarks prior to official release by originators. This paragraph will be titled ACC/TYCOM Concurrence and Amplifying Remarks (Figure 10.10-6) and will:

a. Identify ACC/TYCOM concurrence/Not Applicable status, method and date of concurrence/determination of non-applicability, for example, Concurrence provided via e-mail 21 MAY 08, and include amplifying remarks, additional direction, or restrictions; and respective POC name, rank/rate/grade, office code, DSN/COMM telephone.

b. Be reserved for use by:

- (1) COMNAVAIRFOR.
- (2) COMNAVAIRFORES.
- (3) CNATRA.
- (4) COMNAVAIRSYSCOM (AIR-5.0D).

10.10.4.14.3 TDs determined to be Not Applicable to a particular ACC/TYCOM shall still be reviewed by respective ACC/TYCOM. ACC/TYCOM paragraph shall state "Not Applicable", include reason for non-applicability, for example, equipment not maintained/used at this ACC/TYCOM, and respective POC name, rank/rate/grade, office code, DSN/COMM telephone.

10.10.4.14.4 Message type TDs that include ACC/TYCOM concurrence and amplifying remarks (Figure 10.10-6) will be posted on the NATEC web site (<https://mynatec.navair.navy.mil>), reported to TDSA and authorized for fleet compliance/incorporation.

NOTE: Previous ACC/TYCOM readdressed message type TDs are no longer required. All message type TDs previously released prior to 06 February 2008 and posted to the NATEC web site are authorized for fleet use and filing. For TDs missing from the NATEC web site, contact NATEC at: nani_customerservice@navy.mil

10.10.4.14.5 Issuing activities shall provide proposed list(s) of affected fleet activity message addresses to ACC/TYCOMs for review and concurrence and release message type TDs only after obtaining and including all ACC/TYCOM concurrence and amplifying remarks paragraphs.

NOTE: Message type TDs released after 06 February 2008 and missing ACC/TYCOM concurrence and amplifying remarks paragraph (Figure 10.10.6) shall not be taken for action. Contact the originator POC provided in the header of the message type TD, via the chain of command, for further action.

10.10.4.15 Grounding Bulletins

Grounding bulletins will be processed as follows:

a. Due to urgency, grounding bulletins affecting only COMNAVAIRFOR activities may be released upon obtaining COMNAVAIRFOR concurrence and without additional non-COMNAVAIRFOR ACC/TYCOM concurrence and amplifying remarks.

b. Grounding bulletins that only affect ACC/TYCOM outside of COMNAVAIRFOR will require concurrence and amplifying remarks from each ACC/TYCOM affected.

NOTE: TDs are available via the NATEC web site (<https://mynatec.navair.navy.mil>).

10.10.5 Documentation and Record Keeping Procedures

a. To provide uniformity throughout the system of all aircraft and equipment, all changes, bulletins, and revisions shall be recorded in the appropriate section of the logbook, Aeronautical Equipment Service Record (OPNAV 4790/29), SE Custody and Maintenance History Record (OPNAV 4790/51), Technical Directives (OPNAV 4790/24A), Parachute Record (4790/101), Seat Survival Kit Record (OPNAV 4790/137), Aircrew Systems Record (OPNAV 4790/138), and Aircrew Personal Equipment Record (OPNAV 4790/159).

b. The Technical Directive (OPNAV 4790/24A) Form (Chapter 5) is used in the logbook and the AESR and contains a record of TDs affecting the airframe or equipment structure and its integral parts. All TDs, including revisions and amendments, shall be logged in the sequence received. A separate form shall be initiated for each type TD affecting the basic equipment. AFC and AFB are tracked via TDSA Lists Nos. 2 and 4.

NOTE: For ALSS, and Escape/Survival systems ensure, VFS Trace, CADPAD or VFS Trace Life Support is updated at <https://cadpad.ih.navy.mil>.

c. MAF documentation for TD compliance is in Chapter 15.

d. Power Plants documentation shall be per the Power Plants NALCOMIS User's Guide.

10.10.5.1 O-Level and I-Level Technical Directive (TD) Compliance

10.10.5.1.1 If a TD is complied with at the O-level (on-equipment work), all maintenance actions will be documented using the MAF/WO.

NOTE: Any administrative change that does not add additional work shall not require a MAF/WO. Within NALCOMIS OOMA, completion of administrative tasks shall be accomplished via the manual process in CM Inventory Explorer by the Logbook Clerk.

10.10.5.1.2 If, during compliance with a TD, it becomes necessary to forward an item to the IMA for modification or inspection and return, the following procedures will be followed:

10.10.5.1.2.1 If the IMA informs the O-level that the item requires repair, the O-level must initiate another MAF (Chapter 15) for turn-in and requisitioning purposes using the original JCN. The outstanding TD Compliance MAF, originally provided to the IMA, will be cancelled. After the repair action is complete, Production Control will then initiate a replacement TD Compliance MAF using a supply JCN.

10.10.5.1.2.2 Items processed in excess of 1 may be entered only when the TEC block contains a code beginning with Y, D, S, H, or G or ending with 9 and is either a non-serialized item or does not include a part number change in the Removed/Old Item or Installed/New Item blocks. Serialized items for which a part number change is reflected in blocks E or G must be accomplished on an individual TD Compliance MAF/WO.

10.10.5.1.2.2.1 On-equipment. The MAF is used to document all TD compliance. The TD Compliance MAF is also used by reporting custodians for planning workload and material requirements, and for configuration accounting. Data obtained from the form allows identification of all direct man-hours expended complying with directives. Maintenance Control originates the TD Compliance MAF. Maintenance Control will retain all copies of the MAF except Copy 2, following annotation of parts and kit by Material Control (if required), and forward Copy 2 to QA. When parts, kits, aircraft, and equipment are available for TD compliance, forward Copy 1 and Copy 5 to the primary work center. Hold Copy 3 in suspense on the VIDS board and Copy 4 in the ADB until the TD is complete and Copy 1 has been received from the work center. If more than one work center is involved, Maintenance Control must initiate a separate TD Compliance MAF for each assist work center to document their portion of the TD. TD removals will be documented in the same manner as TD incorporation's except for block A35 and the (H-Z) record. TD Status Code Q will be entered in block A35 and the (H-Z) record will be left blank ([Chapter 15](#)).

NOTES: 1. If operating NALCOMIS OMA, the above process is automated. NALCOMIS MAFs are always routed to appropriate work centers upon initiation.

2. QECK, QEC, and propeller bulletins/changes are considered to be incorporated on the airframe. The TEC consists of type and model of the aircraft followed by a 9 in the fourth position, for example, APB9. The BUNO/SERNO will identify the QECK or the propeller (if applicable).

10.10.5.1.2.2.2 Off-equipment. TDs will frequently require off-equipment work, specifying accomplishment at IMA. In these cases, the activity will use the one character code which actually describes the maintenance level that was performed in block A34 of the TD Compliance MAF/WO.

10.10.5.1.2.2.2.1 If the TD compliance is directly applicable to a component, the removal and replacement of the component and the associated man-hours will be documented on a MAF/WO. Once the removal is completed, the maintenance action remains outstanding until the reinstallation has been accomplished. Those man-hours and the EMT expended in removal may be annotated in the accumulated work hours block for calculation of the total man-hours and EMT to be entered in blocks A41 and A45 when the reinstallation is complete. The O-level activity will then originate a TD Compliance MAF for the component being forwarded to the IMA. This TD Compliance MAF will accompany the component to the IMA for documenting the accomplishment of the TD compliance action and processing. If a component is not ordered, IMA will sign MAF Copy 2, indicating receipt of the component, and return the Copy 2 to the O-level activity as an IOU receipt.

10.10.5.1.2.2.2.2 The IMA will complete the remainder of the TD Compliance MAF, accounting for the item(s) processed in block A39.

10.10.5.1.2.2.2.3 If the IMA informs the O-level that the component requires repair, the O-level must initiate another MAF for turn-in and requisitioning purposes using the original JCN.

10.10.5.1.2.2.3 Close Out. A close out is required for TDs that impact aircraft mission capability. [Chapter 15](#) provides MAF close out procedures.

10.10.5.2 D-Level Technical Directive (TD) Compliance

10.10.5.2.1 D-level TD Compliance is accomplished per the Aircraft Modification Program (06). The Aircraft Modification Program (06) workload is budgeted, funded, and managed as a separate direct program (06) from its parent Aircraft Rework Program (00). The modification of missiles, power plants, components, and SE included in their respective parent direct programs.

10.10.5.2.2 Aircraft Modification Workload Description. Work performed that changes the original design of an aircraft for the purpose of improving safety, performance, reliability, physical maintainability, readiness, or mission effectiveness.

10.10.5.2.3 Aircraft Modification Workload Requirements. Requirements for the installation of modification changes are developed by the applicable T/M/S Program Manager based upon actual and projected availability of the modification change kits and the availability of the aircraft. These requirements are normally generated by the Operational/Safety Improvement Program and ECP items that are approved by COMNAVAIRSYSCOM with the follow-on purchase of kits and the issuance of TDs prescribing the incorporation of the modification change in aircraft. This type of work is accomplished at the naval aviation industrial establishments (either Navy organic, interservice, or commercial contractor) or on-site by industrial field teams.

10.10.5.2.4 Aircraft Modifications Workload Specifications. The TD system is the authorized medium for directing the accomplishment and recording of modifications and one-time inspections of COMNAVAIRSYSCOM (AIR-6.6) accepted aircraft either in the contractor's or the Navy's possession. Requirements for the development and preparation of TDs are detailed in NAVAIR 00-25-300 and AR-41.

10.10.5.2.5 Aircraft Modification Workload Scheduling. The installation of modification change kits in aircraft may be performed concurrent with standard rework. They may also be installed by industrial field teams or at a naval aviation industrial establishment on a drive-in basis. COMNAVAIRSYSCOM (AIR-6.1) allocates direct labor man-hours specifically for the installation of modifications in aircraft under a pre-established schedule.

10.10.5.3 D-Level Technical Directives (TDs) Documentation and Record Keeping Procedures

10.10.5.3.1 General Information

10.10.5.3.1.1 The Technical Directives form (OPNAV 4790/24A) is used in the logbook and the AESR. It contains a record of TDs affecting the airframe structure and its integral parts. Separate pages are required to record each type of TD on equipment and its integral parts. All TDs, including revisions and amendments, shall be logged in the sequence received. A separate form shall be initiated for each type of TD affecting the basic equipment. AFCs and AFBs are tracked via TDSA Lists. TDs concerning equipment require careful screening to ensure the AESR reflects the actual configuration of the equipment.

10.10.5.3.1.2 Preparation. To provide uniformity throughout the system for all aircraft and equipment, all applicable changes and bulletins, including revisions, are recorded in this section of the logbook or AESR with the NAVAIR 00-500C as the baseline. Prior TDs not listed in the NAVAIR 00-500C are no longer applicable to the T/M/S, and are part of the current configuration.

10.10.5.3.1.3 TDs that affect a component for which an MSR, ASR, EHR, or SRC card is required are also recorded in the TD part of that record as well as the logbook or AESR (multiple entry). In this instance, the TD identification is entered and a notation to refer to the applicable MSR, ASR, EHR, or SRC card is entered in the title/remarks column, for example, see (component nomenclature) SRC card. No other information or signature is required. The complete information regarding the change is then entered, with authenticating signature, in the appropriate section of the MSR, ASR, EHR, or SRC card.

10.10.5.3.1.4 When documenting TDs on ASR, EHR, and SRC cards, only those TDs that apply to the respective component nomenclature are recorded, such as an AYB that applies to a hydraulic pump need not be recorded on a generator SRC card. Likewise, a PPC that applies to an afterburner module need not be recorded on an accessory MSR. If the TD is applicable only to a specific part number or range of part numbers, enter the directive in the TD identification blocks, enter "NA" in the status block and the statement, "NA this P/N," in the title/remarks block.

10.10.5.3.1.5 For airframe TDs requiring one time or continuing inspections, the initial, or one time inspection, is logged on the Technical Directives page of the logbook. Subsequent or continuing inspection requirements are added to the MRCs as required in the basic TD. When this action has been completed, no further logbook entry is required for that TD.

10.10.5.3.1.6 TDSA Lists

10.10.5.3.1.6.1 List No. 02, NINC directives applicable to a specific bureau/serial number and List No. 04, INC directives applicable to a specific bureau/serial number, can be retrieved from NALDA by each FRC

10.10.5.3.1.6.2 When initial Lists Nos. 02 and 04 are received, verify them against the Technical Directives page in the logbook. After verification, the Technical Directives page may be destroyed at the discretion of the reporting custodian (aircraft only). Thereafter, Lists Nos. 02 and 04 will be used to log all applicable AFCs and AFBs. TDs that are not applicable will not be on Lists No. 02 or 04. Technical Directives pages will be initiated for logging all other type TDs applicable to the aircraft. Some TDs will require multiple documentation in the logbook (with a refer to statement) and applicable records. This includes TDs, such as accessory changes and bulletins, that will be logged on applicable SRC/EHR cards and QECs and bulletins that will be logged in the AESR.

NOTE: Lists Nos. 02 and 04 may replace the Technical Directives page for aircraft only. All other List Nos. 02 and 04 are provided for use as a management tool only. For aircraft, care must be taken before destroying Technical Directives pages. Production equivalents and ECPs performed on the aircraft by the manufacturer are not presently covered by the TDSA Program and will not appear on Lists Nos. 02 and 04. A separate Technical Directives page will be used to log all production equivalents and ECPs and will be maintained for historical reasons.

10.10.5.3.1.6.3 List No. 04H is a history file created and maintained by COMNAVAIRSYSCOM (AIR-6.3.5) to reduce active file volume and operating cost. The List No. 04H is produced and distributed annually to reporting custodians and marked "Historical Inc., Retain for Permanent Record."

NOTE: Care must be taken when removing List No. 04 each quarter to ensure List No. 04H is not mistakenly removed. Not all aircraft have a history baseline, therefore, not all aircraft have List No. 04H available. Contact the appropriate TDSA manager if a question develops.

10.10.5.3.1.6.4 Insert Lists Nos. 02 and 04 in the Technical Directives section of the logbook. List No. 02 precedes List No. 04.

10.10.5.3.1.6.5 FRCs submit compliance transactions to update TDSA directly.

10.10.5.3.1.7 When a new TD is received, use a black ball point pen to identify the TD on List No. 02. As a minimum, the following information must be listed (if applicable); I (if interim), TD code, TD basic number, revision letter, amendment number, TD part number and kit required. When the TD is complied with, annotate the TD status code immediately to the left of SER column. Transcribe all TD identification data and TD status codes to List No. 04. This will provide a complete, up-to-date configuration listing of the aircraft at all times.

10.10.5.3.1.8 Production Equivalents, ECPs, and Prototype or Modification of Aircraft or Equipment. P&E or E&E will comply with the details in the related correspondence describing the action to be accomplished, if authorized. Logbook entries will be made as required on the appropriate Technical Directives page/Miscellaneous/History page or applicable record's Technical Directives section.

10.10.5.3.1.9 Block Entry Procedures. Block entries are authorized for use by the original accepting activity, rework activities, and I-level first degree engine repair sites upon completion of first degree engine repair. The use of this type of entry provides for a consolidated accounting of TDs when the equipment is new and upon completion of each standard rework or first-degree engine repair. Block entries may be used only for a series of consecutively numbered TDs having the same status code. This procedure is necessary so subsequent custodians can determine the configuration of the aircraft without being required to screen the entire file of TDs for applicability. Original accepting activities ensure each entry in this section is valid and is supported by an official TD. NAVAIR 00-500C is the TD accountability baseline. All previous TDs are part of current configuration.

NOTE: Block entries are authorized for use by all activities when consolidating ASRs, EHR cards, and SRC cards.

10.10.5.3.1.9.1 INC. Use block entries when possible. Enter basic number, status, activity, date, and signature. The date is considered to be the date of acceptance or the date of overhaul. Examples of INC block entries follow:

a. When a change is incorporated during production and a TD is issued, the assigned TD number is entered as INC and the notation "Production Equivalents" is entered for a block of incorporated changes in the title/remarks column and lists the applicable TD numbers of such changes, for example, an entry may be 120-155 INC. If production equivalent changes are included within this block, the title/remarks column might contain the notation "129, 139, 152, Production Equivalents". These changes often differ physically from changes issued to field and operating activities and require this notation to avoid confusion. A separate page will be used to log all ECPs. All incorporated ECPs shall be entered numerically, using the block entry procedure, and remain as a permanent logbook entry.

b. When a series of incorporated TDs is entered in block form, the next line is used for listing subsequently issued, not incorporated revisions to TDs included within the entry. The notation "Revisions to above block entries" appears on this line, and the listing of revisions shall follow. Operating activities also use this line for listing revisions that are subsequently issued to TDs within the block entry. The actual records of status and compliance are entered on the pages designated revisions.

10.10.5.3.1.9.2 NINC. Separate entries are required. Enter the TD identification, the status code (in pencil), priority, and title/remarks.

10.10.5.3.1.9.3 NA. Use block entries when possible using NAVAIR 00-500C as the baseline. Only the TD identification, activity, and signature are required. When a new version of the same model aircraft is produced, it is the responsibility of the original accepting activity to account for changes to the original model by making a logbook entry, for example, 1-155 NA, and the notation "PPCs 1-155 are now part of current configuration or apply to another T/M/S", in the title/remarks column. This entry ensures all TDs in the model series are accounted for, and cites by number, either those TDs not applying to the new version, or those considered part of the current configuration. Here, no action is required by Navy activities. The entry is not to be construed as indicating the modifications prescribed by the TDs contained within the block entry may not have been included in the production models of the new version.

10.10.5.3.1.9.4 NIS. Separate entries are required. Enter the TD identification and status code only.

10.10.5.3.1.9.5 CANX. Use block entries when possible. Only activity and signature are required.

10.10.5.3.1.10 Documenting the removal of a TD. COMNAVAIRSYSCOM approved configuration will be maintained. In some cases the TDs are removed; this is particularly true with PPCs.

10.10.5.3.1.10.1 Prior to the removal of any TD, proper authorization must be obtained. ACCs have authority to approve TD removal via message if operational necessity dictates. However, the COMNAV-AIRSYSCOM APMML must be an info addressee on the authorization message. Financial responsibility for parts to reinstall the TD lies with the ACC/TYCOM and reporting custodian.

10.10.5.3.1.10.2 TD removal will be documented in the same manner as TD incorporation. The only exception is the use of TD Status Code Q in the A/T field of the MAF/VO.

10.10.5.3.1.10.3 The Technical Directives page will be annotated in the following manner:

- a. Draw a single line through the TD status code (block 6), enter TD Status Q in the same block, with initials of the person authorized in writing to sign logbooks and records.
- b. Make an entry on the Miscellaneous/History page, specify the reason for removal, authority, location of parts removed, and other pertinent information.

10.10.5.3.1.11 When reinstalling a removed TD, document as a normal TD incorporation. Make a complete TD entry on the revision page. When documenting the removal and reinstallation of a TD on an item which has an MSR, ASR, EHR, or SRC card, see specific documentation for that applicable record.

10.10.5.3.1.12 Technical Directives page status codes are as follows:

- a. INC. Indicates the specified TD has been completely incorporated. A complete entry is required.
- b. NINC. A temporary entry made in pencil. This code is used to indicate TDs that have been issued but not incorporated, including TDs that are only partially incorporated. It is not necessary to assign codes to denote reasons for nonincorporation. Activities should screen logbooks at frequent intervals to determine the interim status of nonincorporated TDs. Enter TD identification, status code (in pencil), and title.
- c. PINC. Identifies TDs that were previously incorporated.
- d. NA. TDs that do not apply to the particular aircraft model or BUNO. Enter TD identification, status code, activity, and signature. A brief notation is made in the title/remarks column to indicate nonapplicability, for example, previous models only or not this bureau number. Title of the TD is not required.
- e. NIS. TDs that have not been issued, will not be issued, or have not been received. This entry is made in pencil unless it is determined the TD will not be issued, in which case a permanent entry is made. Enter TD identification and status code. No other information or signature is required.
- f. CANX. This code is used when a TD has been previously issued but is cancelled prior to incorporation. Enter TD identification, status code, activity, and signature. No title of the TD is required; however, the cancelling reference should be noted in the title block. When a TD has been incorporated and is later cancelled, the TD status code remains INC.
- g. Q (TD Removal). Used to document the removal of an installed TD.

10.10.5.3.2 Purging. Upon completion of off-site standard rework, the rework activity will purge the AESR. Consolidate this section of the aircraft logbook using block entries on new pages. The FRC activity, upon completion of repair or rework, will consolidate this section of the AESR using block entries on new pages.

IMC/P aircraft AESRs will be purged by a D-level activity once per FSP as directed by the T/M/S Program Manager.

10.10.5.3.3 Specific documentation is as follows:

Block 1 - TYPE DIRECTIVE. Enter the type of TD. Separate pages will be maintained for each type of TD.

Block 2 - AIRCRAFT MODEL/EQUIPMENT NAME. Enter the aircraft T/M/S. If equipment, enter the equipment name.

Block 3 - TYPE/MODEL/SERIES. If aircraft, leave blank. If equipment, enter T/M/S.

Block 4 - BUNO OR SERIAL NUMBER. Enter the aircraft BUNO or equipment serial number.

Block 5 - TECHNICAL DIRECTIVE IDENTIFICATION.

Block 5a - BASIC. Enter the basic number of the TD. All TDs are logged in numerical sequence except on the pages titled "Revisions and Amendments". These are logged in the order they are received. This includes numbered spaces for TDs not received.

Block 5b - INT. Interim TDs are recorded on the same sheet as formal TDs and are identified by an I in the INT Block. When cancellation instructions in an interim TD indicate it will be superseded by a regular TD, enter in pencil the regular TD number on the following line with a temporary status code NINC.

Block 5c - REV. Enter the letter to indicate revision. They are logged as received on the revision page.

Block 5d - AM. Enter the number to indicate the amendment. A separate line is required for each amendment. When different amendments are to be incorporated by different levels of maintenance a temporary code of NINC (in pencil) will be made for the applicable amendment. In instances where a single line has been left for a TD not received (NIS status) and a TD is subsequently received with an amendment or multiple amendments, the basic TD is entered and accounted for on the applicable Technical Directives page. This entry will also reference the remaining amendments, which are recorded on the Revision page.

NOTE: All applicable amendments will be logged with the exception of those listed on List Nos. 02 and 04. NAVAIR 00-500C is the baseline for applicable amendments.

Block 5e - PT. Multiple Part TD. Some TDs consist of several parts. Accounting for this type directive presents special problems when the separate parts are assigned different priorities or are to be accomplished at different times. You will know to use the part number if it appears in the title line of the TD. To provide a standard recording procedure for this type of TD, logbook and AESR entries are made per the following:

a. When a TD is composed of several parts, separate consecutive entries are made for each part indicating the priority and status of each. A multiple part TD is not included in a block entry unless all parts have been incorporated.

b. In instances where a single line has been left for a TD not received (NIS status) and a multiple part TD is subsequently received, part one is entered and accounted for on the applicable Technical Directives page. This entry also will reference the remaining parts, which are to be recorded on the applicable Technical Directives revisions page(s).

Block 5f - KIT. Enter kit number as identified in the TD; if none, enter 00. Use a separate line for each A kit.

Block 5g - PRI. Enter I for Immediate, U for Urgent, R for Routine, or K for Record Purpose, as applicable. Category K shall be used when a modification has been completely incorporated by the contractor in all accepted equipment prior to issuance of the TD, and when retrofit of repairables in the Navy's possession is not required.

Block 6 - STATUS. Enter the appropriate status code. No status codes other than those prescribed shall appear in the logbook, nor is any code used to indicate other than its intended meaning. When documenting the removal and reinstallation of a TD on an item which has an MSR, ASR, EHR, or SRC card, see specific documentation for that applicable record.

Block 7 - TITLE/REMARKS. Enter the title of the TD and any necessary remarks. This need not be the complete subject title of the TD. For items which have an MSR, ASR, EHR, or SRC card, see specific documentation for that applicable record.

Block 8 - COMPLIANCE.

Block 8a - BY (Activity). Enter the short title of the activity complying with the TD, for example, VF-1.

Block 8b - DATE. Enter the YYMMDD of the compliance.

Block 9 - SIGNATURE. A person having logbooks and records signature authority will sign this block.

10.10.5.3.4 When documenting TD amendments involving only administrative actions (part number change, completion date, or BUNO) the following required entries shall be made on the respective TD page, titled Revision and Amendments:

Block 5a - BASIC. Enter the basic number of the TD.

Block 5b - INT. Enter only if applicable.

Block 5c - REV. If applicable, enter the letter to indicate the revision.

Block 5d - AM. Enter the number to indicate the AM.

Block 5e - PT. Enter only if applicable.

Block 5f - KIT. Enter the kit number as identified in the TD; if none, enter 00.

Block 5g - PRI. As applicable, enter I for Immediate, U for Urgent, R for Routine, or K for Record Purpose. PRI shall be the same as the basic or last revision issued.

Block 6 - STATUS. If the amendment is a cancellation to the basic TD or revision, enter CANX. If the amendment is not applicable, enter NA. For items having an MSR, ASR, EHR, AESR, SRC, or Aircrew Record, leave blank and enter appropriate record.

Block 7 - TITLE and REMARKS. Enter the purpose of the amendment (change completion date, add BUNO/SERIAL) for items having an MSR, ASR, EHR, AESR, SRC, or Aircrew Record, enter applicable notation, for example, "see Air Turbine Starter EHR Card".

Block 8a - BY (Activity). Enter the short title of the activity complying with the TD, for example, VAW-115. Leave blank for those items that are not an integral part of the airframe.

Block 8b - DATE. Enter the YYMMDD of the compliance. For items having an MSR, ASR, EHR, AESR, SRC, or Aircrew Record, leave blank and enter on appropriate record.

Block 9 - SIGNATURE. A person having logbooks and records signature authority will sign this block. For items having an MSR, ASR, EHR, AESR, SRC, or Aircrew Record, leave blank and enter on appropriate record.

10.10.5.4 D-Level Configuration Management Technical Directives Record

10.10.5.4.1 This CM ALS record provides a record of TDs affecting the airframe structure and its integral parts. Separate subsections are required to record each type of TD.

10.10.5.4.2 The source for updating this O-level, I-level, and D-level record, is a WO or CM Inventory Explorer task that provides a detailed listing of TD requirements pushed down from the COMNAVAIR-SYSCOM baseline.

10.10.5.4.3 TDs that affect a CM ALS component are recorded electronically in the TD part of that record.

10.10.5.4.4 TDs requiring continuing inspections are logged on the CM ALS inspection record. Subsequent or continuing inspection requirements are pushed down from COMNAVAIRSYSCOM Baseline Managers as required in the basic TD.

10.10.5.4.5 Production Equivalents, ECPs, and Prototype or Modification of Aircraft or Equipment. The CM ALS Administrator will comply with the details in the related correspondence describing the action to be accomplished (if authorized). CM ALS entries will be made (as required) on the appropriate Miscellaneous History record.

10.10.5.4.6 TD Removal.

NOTE: Reporting custodians shall maintain COMNAVAIRSYSCOM approved configuration

10.10.5.4.6.1 Prior to the removal of any TD, proper authorization must be obtained. ACCs have authority to approve TD removal via message if operational necessity dictates. However, the COMNAVAIRSYSCOM APML must be an info addressee on the authorization message. Financial responsibility for parts to reinstall the TD lies with the ACC/TYCOM and reporting custodian.

10.10.5.4.6.2 TD removal will be documented in the same manner as TD incorporation. The only exception is the use of TD Status Code Q.

10.10.5.4.6.3 The TD record will be annotated in the following manner:

- a. Enter TD Status Q on the WO; CM ALS will reflect a status code of Q.
- b. Make an entry on the Miscellaneous History Record, specify the reason for removal, authority, location of parts removed, and other pertinent information.

10.10.5.4.7 The TD record includes the following columns: TD Code, Number, Interim, Revision, Amendment, Part, Kit Priority, Issue Date, Title/Remarks, Maintenance Level, Man-hours, Target Completion Date, Status, Completion Date, Activity, and Signature.

10.10.5.4.8 When reinstalling a removed TD, document it as a normal TD incorporation. Make a complete TD entry on the TD record. When documenting the removal and reinstallation of a TD on an item with a CM ALS MSR, ASR, EHR, TCR, or SRC, see specific documentation for that applicable record.

NOTE: The OMA-UG/Online Help provides detailed information of the records and hot link definitions for functionality.

10.10.5.5 Aircraft Engine and Airborne Auxiliary Power Unit (APU) Maintenance Documentation

10.10.5.5.1 General Information. The aircraft is considered to be the end item when work is performed on engines, except for TD compliance at the O-level. Engines to be sent to IMA for any reason will be considered the end item and the turn-in document will list the engine TEC and the engine PSSN, or the module S/N, in blocks A48 and A52 of the MAF. When documentation requires an engine or APU to be identified in the Removed/Old Item or Installed/New Item blocks (E08-E52 or G08-G48), the MFGR block (E08 and G08) will reflect the engine and APU TEC and position number, for example, JHDA2. The Part Number blocks (E23 and G23) will be left blank when TECs are used in the MFGR blocks to identify engines and APUs. Documentation procedures, whether an aircraft engine or airborne APU are the same with the following exceptions:

- a. Block 14 (H-Z) MFGR Code. When identifying an APU always enter numeric 1 for engine position; for example, PHAB1.
- b. Block E08 and G08. When identifying an APU always enter numeric 1 for engine position; for example, PHAB1.
- c. Block E42 and G38. When documenting APU enter the engine hour meter or start counter reading, as appropriate.

10.10.5.5.2 Engine TD Compliance. The MAF/WO will be used to document all TD compliance maintenance actions per [Chapter 15](#). The TD Compliance MAF/WO is also used by reporting custodians for planning workload and material requirements, and for configuration accounting. Data obtained from the MAF/WO allows identification of all direct man-hours expended complying with directives. Maintenance Control will generate the TD Compliance MAF/WO. If more than one work center is involved, Maintenance Control must initiate a separate TD Compliance MAF for each assist work center to document their portion of the TD. If the TD has multiple parts, a separate MAF/WO must be initiated for each part.

10.10.5.5.3 Modular Engine TD Compliance

- a. TDs for modular engines will be issued against the module.
- b. WUC will be that of the module or component of the module, never the engine.
- c. TEC block (A48) will reflect the equipment category, model and series of the engine. For modules, the engine application series (fourth position) will be X, for example, F404-GE-400 module would be TXAX. If a component is being sent from supply for TD compliance, the TEC will be for the equipment category, model and series with an X in the application series (fourth position), for example, F404-GE-400 engine component separate from a module would be TXAX.
- d. TDs that apply to more than one module, a separate MAF/WO with a unique JCN will be issued for each module.
- e. Transaction Code 41 will be used with TD compliance with no part number change.
- f. Transaction Code 47 will be used for all serialized modules with or without a part number change, or a TD incorporation on a component. Blocks E08 through E52 and G08 through G48 will be completed.
- g. JCNs will be that of the activity requesting the TD incorporation.
- h. The PSSN will be entered in the discrepancy block for engines that are being turned in for TD compliance.

UNCLASSIFIED//
R 202102Z MAY 08
FM NATEC SAN DIEGO CA (UC)
AIG 428
AL 428 (uc)
MSGID/GENADMIN/NATEC SAN DIEGO CA/6.8.5.3//
SUBJ/TECHNICAL DIRECTIVE WEEKLY SUMMARY//
REF/A/MSGID-DOC/NAVAIR 00-25-200/YMD: 200080601//
AMPN/REF (A) NAVAIRSYSCOM TO SYSTEM MANAGEMENT AND PROCEDURES MANUAL//
POC/NAME AS APPLICABLE /6.8.5.2/UNIT:NATEC TD SECTION LEAD/-
/TEL:XXX-XXX-XXXX/TEL:DSN XXX-XXXX/EMAIL: NAME AS APPLICABLE @NAVY.MIL//
GENTEXT/REMARKS/WEEKLY SUMMARY FOR TD'S POSTED DURING WEEK ENDING 16 MAY 08

1. TD WEEKLY SUMMARY DISTRIBUTED IAW REF A.
2. REQUEST FORWARDING OF THIS TD SUMMARY MESSAGE TO ALL SUBORDINATE COMMANDS.
3. SEND GENERAL INQUIRIES AND FEEDBACK ON ERRORS IN SUMMARY TO NANI (UNDERSCORE) TECHDIRECTIVES@NAVY.MIL
4. THE FOLLOWING RECENTLY-RELEASED TD'S, ISSUED DURING THE PAST 90 DAYS, WERE POSTED TO THE NATEC WEBSITE DURING THE PRIOR WEEK. PRESIDENTIAL CHANGE TD'S AND ALL FMS TD'S ARE EXCLUDED FROM THIS SUMMARY.
 - A. A-6-AFC-829-A2, NASC PAX/12 MAY 2008-09-10/AUTOMATIC PILOT ENGAGING CONTROLLER, C-12721/ASW-61.
INSTALLATION OF (WUC 572L2).
A-6: EA-6B.
LOM O. NSN 087OLD1077750
 - B. A-6-AFC-847-RA-A1, NASC PAX/15 MAY 2008
EA-6B ICAP III AIRCRAFT, BLOCK 1 TO BLOCK 2 CONFIGURATION, MODIFICATION OF.
A-6: EA-6B
LOM O. NSN 087OLD1077761
 - C. A-6-ASC-52-RA, NASC PAX/141239ZMAY08
EA-6B ICAP III BLOCK 1 TO BLOCK 2 SOFTWARE CONFIGURATION. (WUC 769UO)
A-6: EA-6B
LOM O/D
 - D. AAB-717, NASWC CRANE/120527ZMAY08
TO DIRECT A ONE-TIME INSPECTION OF BRU-26B/A BOMB EJECTOR RACK, PN 292HN200-1.
V-8: ALL V-8 ACFT.
LOM O/I
 - E. AVC-5419, FRC SOUTHEAST (JAX) /141439ZMAY08
E-6 WINDOW ANTI-ICE HARNESS ASSEMBLY, MODIFICATION OF (WUC 41410), RAMEC JAX-017-06).
E-6: E-6B.
LOM O//

Figure 10.10-1: Weekly Summary for Issued Technical Directives (Sample)

TECHNICAL DIRECTIVE ROUTING AND TRACKING SHEET (PART 1)

1. CTPL Librarian Action (Upon receipt of new TD): TD Number: _____ Date Received: _____
a. Stamp and Date original TD, and maintain as the master
b. Stamp and Date copy and route to QA for screening

CTPL Librarian Signature _____ Date: _____

2. QA Action:

- a. TD has been screened by SME QAR/CDQAR and APPLIES / DOES NOT APPLY (circle one) to
Equipment: _____

b. TD compliance Target Completion Date: _____

c. TD compliance due no later than, and maintenance level: _____

Remarks: _____

Subsequent to: _____

Concurrent with: _____

Screening SME QAR/CDQAR

Print: _____

Signature _____ Date: _____

3. Technical Directive Coordinator and Maintenance/Production Control Action:

- a. Update Legacy NALCOMIS TD configuration files. (F/D/A); for OOMA, verify the TD Configuration file has been updated by the T/M/S Baseline Manager. If the baseline has not been updated, ensure SA submits a Baseline Trouble Report.
b. For Legacy NALCOMIS Initiate MAFs (ensure compliance is clearly spelled out on each MAF as required). For OOMA attach the Task to the CM Module then initiate applicable Work Orders. Brief all affected work centers on the requirements of the TD and determine material support/timeSE required with the assistance of the expeditor and work center, order parts, and kits as required.
c. Complete columns I, II, III, of the TD Routing and Tracking Sheet (Part 2)
d. Screen for Support required; i.e. Supply Stock screening (using [Figure 10.10-1](#) I-Level Only), NDI/P&E/ Not Applicable
e. Initial column IX of the TD Routing and Tracking Sheet (Part 2) when Parts/Kits are on order.

TD Coordinator: _____ Date: _____

Maintenance/Production Control _____ Date: _____

**NOTE: Routing Copy of TD with Part 2, will be filed and held by TD Coordinator until the TD has been completed.
Forward completed MAFs/WOs, the TD and Part 2 to QA.**

4. MMCO Action:

- a. Screen for Weight and Balance: APPLIES / DOES NOT APPLY (Circle One). If it applies leave block VII of the TD Routing and Tracking Sheet (Part 2) blank until step 7 below.
b. For TD's that Weight and Balance does not apply, slash Column VII of TD Routing and Tracking Sheet (Part 2), write NA and sign below.

Weight and Balance Officer _____ Date: _____

Figure 10.10-2: TD Routing and Tracking Sheet (Part 1)

TECHNICAL DIRECTIVE ROUTING AND TRACKING SHEET (PART 1) (continued)

5. Initial Logs & Records Action:

- a. Make Appropriate Logs and Records Entries and update Column V of TD Routing and Tracking Sheet (Part 2), ensure TD Coordinator returns the TD Routing and Tracking Sheet (Part 1) to the Program Monitor.

Logs and Records/Maintenance Administration (Marine Corps)

Signature _____ Date: _____

6. Final Logs and Records Action (Upon receipt of TD MAF sign-off or Field Team Request Form):

- a. Upon signing LOGS and REC on a TD MAF, print and place in appropriate individual aircraft/equipment TD Folder.
b. As required, complete any Logs and Records entries for TD and update column VI of the TD Routing and Tracking Sheet (Part 2)

Logs and Records/Maintenance Administration (Marine Corps)

Signature _____ Date: _____

7. MMCO Action:

- a. Weight and Balance Entries Completed (If applicable) YES N/A **(Circle One)**
b. After the Weight and Balance Program has been updated and all applicable forms have been printed initial block VII of the TD Routing and Tracking Sheet (Part 2).

Weight and Balance Officer _____ Date: _____

8. System Administrator/Data Analyst Action:

- a. Legacy NALCOMIS review MDR-4-1 or MDR-4-2 to ensure MAF was processed and initial Column VII. (This block is left blank for D-level TDs).
b. N/A for OOMA commands.

Signature _____ Date: _____

9. Technical Directive Coordinator (TDC) & Maintenance/Production Control Action:

- a. Update the Legacy NALCOMIS TD Configuration file.
b. Verify that completed TDs are not listed on the NALCOMIS TD Outstanding Report.
c. Print the TD Completion Report and file for records.
d. Enter date completed from TD MAF or Field Team Request Form in column IV of TD Routing and Tracking Sheet (Part 2)

TD Coordinator _____ Date: _____

Maintenance/Production Controller _____ Date: _____

10. Quality Assurance Action (Upon receipt of TD MAF sign-off):

- a. Review current TD Outstanding Report and TD Completed Report to verify NALCOMIS TD Configuration File accuracy.
b. Verify all Logs, Records, Weight and Balance and the TD Routing and Tracking Sheet (Part 2) has been completed, initial block VI of the TD Routing and Tracking Sheet (Part 2).
c. Upon completion of all routing requirements, remove Part 1 and Part 2 from Copy, attach to Master and file in historical binders.

Program Monitor Signature: _____ Date: _____

Figure 10.10-3: TD Routing and Tracking Sheet (Part 1) (continued)

TD ROUTING AND TRACKING SHEET (PART 2)

Technical Directive Number _____

Work Center _____

Equipment Part Number _____

Date Initiated _____

I BUNO/SER NO	II JCN	III DUE NLT	IV Date Completed	V Logs & Records List 02/TD Page(s)/Records	VI Logs & Records Final List 04/ INC/NA		VII Weight & Balance	VIII MDR-4-1 MDR-4-2	IX Parts/Kits Ordered
					L/R	QAR			

Figure 10.10-4: TD Routing and Tracking Sheet (Part 2)

ROUTINE ACTION

DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
RADM WILLIAM A. MOFFETT BUILDING
47123 BUSE ROAD, BLDG. 2272
PATUXENT RIVER, MD 20670-1547

1. AIMD NORTH ISLAND
 2. COPY NUMBER 001
 3. LOCATION 04A
- DEC 12 2004

Cognizant Code(s): AIR-3.2.1/AIR-4.3.5
Issue Date: 13 August 2008-09-10
Target Completion Date: 31 December 2008

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ACCESSORY CHANGE NO. 1213 AMENDMENT 2
(TDC 61)

SUBJECT: A/A42R-1, AIR REFUELING STORE (ARS), Envelope Expansion Modifications (WUC 466D433)

PURPOSE OF AMENDMENT: Modify Incorporation Schedule.

DETAILED INSTRUCTIONS:

1. Modify incorporation schedule as follows:

<u>Equipment</u>	<u>Maintenance Level</u>	<u>CY</u>	<u>J</u>	<u>F</u>	<u>M</u>	<u>A</u>	<u>M</u>	<u>J</u>	<u>J</u>	<u>A</u>	<u>S</u>	<u>O</u>	<u>N</u>	<u>D</u>
<u>Basic</u>	<u>Intermediate</u>	04									12	12	12	12
		05	12	12	12	12	12	12	12	12	12	12	12	12
		06	12	12	12	12	12	12	10					

By Direction of the
Commander
Naval Air Systems Command

PREPARED BY: Naval Air Depot Jacksonville (ARS FST)

VERIFIED BY: This amendment does not generate any change, which invalidates the verification performed on the basic technical directive.

0870LD1034320

Figure 10.10-5: TD with a Control Stamp Affixed - TD Screening Request/Results (Sample)

TD Screening Request/Results

Date: _____

From: AIMD MMCO
To: Supply Officer

Subj: TECHNICAL DIRECTIVE SCREENING REQUEST

1. The following TD applies to the LRCA/MAMs/Test Bench Installations/SE listed below. Any assets requiring the TD must be inducted for incorporation.

a. TD Number: _____

b. Purpose: _____

c. Applies to the following equipment:

Part Number: _____

NIIN: _____

Signature: _____

Date: _____

Date: _____

From: Supply Officer
To: AIMD MMCO

Subj: TECHNICAL DIRECTIVE SCREENING REQUEST

1. All supply assets have been screened. The following stock assets require the TD and will be inducted for incorporation:

Part Number: _____

NIIN: _____

Serial Number (s): _____

Signature: _____

Date: _____

Figure 10.10-6: TD Screening Request/Results

##. ACC/TYCOM CONCURRENCE/AMPLIFYING REMARKS:

A. COMNAVAIRFOR: CONCURRED VIA E-MAIL ON 02JUL08.

1) COMMENTS, ADDITIONAL/AMPLIFYING REMARKS: CNAF HAS REVIEWED AND CONCURS WITH TD AS WRITTEN AND DIRECTS ALL CNAF ACTIONEE UNITS TO TAKE FORAC.

2) POC: LAST NAME, FIRST, RATE/RANK T/M/S CLASS DESK, OFFICE COMMAND CODE NXXXX, DSN ###-###-####/COMM ###-###-####.

B. COMNAVAIRFORES: N/A VIA E-MAIL 02JUL08.

1) COMMENTS, ADDITIONAL/AMPLIFYING REMARKS: CNAFR HAS NO ICAP III AIRCRAFT, DOES NOT APPLY

2) POC: LAST NAME, FIRST, RATE/RANK T/M/S CLASS DESK, OFFICE COMMAND CODE NXXXX, DSN ###-###-####/COMM ###-###-####.

C. CNATRA: N/A

1) COMMENTS, ADDITIONAL/AMPLIFYING REMARKS: CNATRA DOES NOT HAVE CUSTODY OF ANY EA-6B AIRCRAFT. OTHER TMS CNATRA AIRCRAFT AND SUPPORT NOT IMPACTED BY THIS TD.

2) POC: LAST NAME, FIRST, RATE/RANK T/M/S CLASS DESK, OFFICE COMMAND CODE NXXXX, DSN ###-###-####/COMM ###-###-####.

D. COMNAVAIRSYSCOM 5.0D: CONCURRED VIA E-MAIL 02JUL08.

1) COMMENTS, ADDITIONAL/AMPLIFYING REMARKS: NAVAIR AIR-5.0D HAS REVIEWED AND CONCURS WITH TD AS WRITTEN AND DIRECTS ALL NAVAIR AIR-5.0D ACTIONEE UNITS TO TAKE FORAC.

2) POC: LAST NAME, FIRST, RATE/RANK T/M/S CLASS DESK, OFFICE COMMAND CODE NXXXX, DSN ###-###-####/COMM ###-###-####.

**Figure 10.10-7: ACC/TYCOM Concurrence/Amplifying Remarks Paragraph
for Message Type TDs (Sample)**

10.11 Foreign Object Damage (FOD) Prevention Program

10.11.1 Introduction

10.11.1.1 The FOD Prevention Program establishes policy, responsibilities, and requirements to prevent damage to aircraft, engines, SE and other aeronautical equipment, and to provide uniform FOD reporting procedures.

10.11.1.2 Reference. OPNAVINST 3750.6, Naval Aviation Safety Program.

10.11.2 Discussion

10.11.2.1 The FOD Prevention Program is applicable to commercial and other government activities performing contract maintenance, production, or other support functions on naval aircraft, and all Navy and Marine Corps activities operating or directly involved in the repair of aircraft, gas turbine engines, or SE and units directly supporting flight operations. O-level, I-level, and FRC activities shall establish written FOD Prevention Program procedures and maintain an effective FOD Prevention Program that is planned, integrated, and developed in conjunction with production, maintenance, test, safety, and QA functions. The FOD Prevention Program is an all hands effort and must be supported by every individual assigned to the command. Ingestion of foreign objects by gas turbine engines accounts for the largest percentage of premature engine removals from naval aircraft. FOD presents personnel and material hazards, consumes valuable maintenance man-hours, imposes additional unscheduled workloads on both using and supporting activities, creates shortages, wastes dollars, and reduces operational readiness.

10.11.2.2 Most FOD can be attributed to poor housekeeping, facility deterioration, improper maintenance practices, or carelessness. FOD must be controlled.

10.11.2.3 An effective FOD Prevention Program which identifies, corrects, and eliminates causal factors is a command responsibility and must be a part of the maintenance program. Each unit operating aircraft, engines, or SE or directly supporting flight operations, shall designate a FOD Prevention Program Manager, and form a command FOD Prevention/Investigation Team. The FOD Prevention Program Manager, Safety Department, and QA Division shall be included members of the FOD Prevention/Investigation Team. The team is responsible to the CO to carry out the FOD Prevention Program on a day-to-day basis. COs of FRCs shall establish a FOD Prevention Program, FOD Prevention Committee, and appoint a FOD Committee Chairperson. The FOD Prevention Committee shall have sufficient authority and organizational freedom to identify and implement FOD prevention measures whenever and wherever required. The FOD prevention committee is to develop and implement plans and programs to prevent hardware damage during storage, transporting, flight line, and launch operations. The committee will be responsible for providing information to update the status of the local FOD Prevention Program and will ensure prevention efforts are in consonance with local policy, direction, and procedures. A successful program requires command support, personnel knowledge and awareness, and integration into the total maintenance effort.

NOTE Quality organization officers and safety officers shall not be appointed chairpersons of FOD Prevention Committees.

10.11.2.4 Potential FOD is a condition where a foreign object is in a position to cause damage when a product or system is used. Examples are, but not limited to:

a. Tools, manufacturing or inspection hardware, and other objects left in the vicinity of or in the migratory path of engine inlets.

b. Metal or wire clippings, solder balls, and other debris lying in the vicinity of electrical terminals, circuitry, connectors, or components.

- c. Tools, hardware, or debris left in the vicinity of or in the migratory path of a vehicle's control system.
- d. Tools, hardware, or debris lying on runways, ramps, and taxiways.
- e. Residue from plastic media blasting during paint removal.

10.11.2.5 FOD is damage to a gas turbine engine caused by ingestion of objects not organic to the affected engine and that can be expressed in physical or monetary terms and may or may not degrade product safety or performance characteristics. Engine FOD incidents are categorized as reportable and nonreportable.

a. Reportable FOD is defined as one which requires aircraft engine/module removal; occurs on an engine test cell; or in the case of an engine, such as the TF34/T56 that require fan blade or turbine replacement, without engine removal.

b. Nonreportable FOD is defined as repair without engine, fan blade, or module removal.

10.11.2.6 Each engine FOD incident (including FOD due to natural causes, such as birds or ice) shall be investigated, and an Engine FOD Incident Report (Figure 10.11-1) shall be submitted by the FOD Prevention Program Manager within 5 working days of discovery for each reportable FOD. In cases where two or more engines on a multi-engine aircraft incur FOD during a single incident, reporting custodians may include all reportable engines on a single Engine FOD Incident Report. A copy of the Engine FOD Incident Report shall accompany all FOD related engine retrogrades. A mishap report may be required per OPNAVINST 3750.6. The report does not satisfy mishap reporting required per OPNAVINST 3750.6. In addition, a supplemental Engine FOD Incident Report, which provides additional significant information, may be submitted by O-level, I-level, or FRC activities (as appropriate). The supplemental report shall reference the initial Engine FOD Incident Report DTG.

10.11.2.7 Internal engine component failure and the damage resulting from such failure shall not be interpreted or reported as FOD. Minor roughness or erosion of blades or vanes, within serviceable limits, shall not be interpreted or reported as FOD.

10.11.2.8 The Engine Removal/Turn-in, VIDS/MAF (OPNAV 4790/60), shall reflect MAL Description Code 030 (mishap damage) when FOD is the direct result of an aircraft mishap. The related mishap report submitted per OPNAVINST 3750.6 shall clearly state the events that justify use of MAL Description Code 030 and discuss the FOD damage occurring in the course of the mishap.

10.11.2.9 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.11.3 Responsibilities

10.11.3.1 ACCs, TYCOMs, COMFAIRs, and MAWs shall monitor FOD incidents/rates for all reporting commands. Negative trends shall be identified and appropriate commanders immediately notified.

10.11.3.2 Navy Type Wings, CVWs, and MAGs shall:

a. Compile data received from Engine FOD Incident Reports from subordinate activities and analyze it to identify causes, hazards, and FOD prone areas of the aircraft and establish or recommend to ACC, TYCOM, COMFAIR, or MAW any perceived aircraft engineering deficiency which has, or could contribute to a FOD incident, and procedures to inspect/eliminate the hazard.

b. Assist subordinate activities in evaluating all aspects of FOD prevention and provide in-depth training for all hands in proven FOD prevention methods and type aircraft peculiarities.

c. Designate, in writing, a FOD Prevention Officer.

d. TRAWING commanders, in addition to (1) and (2) above, designate a FOD Prevention Officer to serve as the point of contact on all matters pertaining to FOD and will work in liaison with the Naval Air Training Management Support Activity Detachment to ensure program and contractual compliance.

10.11.3.3 COs of aviation capable ships and aviation ships/stations and other commands supporting aircraft operations or maintenance shall:

a. Include at least one person from each aviation unit or department that have personnel working in or around aircraft operating/maintenance areas as a member of the FOD Prevention/Investigation Team.

b. Aggressively support the FOD Prevention Program by ensuring flight decks and runways/taxiways are thoroughly inspected prior to daily flight operations and are clear of foreign objects.

c. Ensure assigned personnel receive indoctrination training, encompassing the importance of the FOD Prevention Program and fastener control procedures.

10.11.3.4 Aircraft reporting custodians shall:

a. Submit an Engine FOD Incident Report ([Figure 10.11-1](#)) within 5 working days after discovery for each FOD incident meeting the criteria of this instruction.

b. Address the Engine FOD Incident Reports to the cognizant ACC/TYCOM, MAW, or Navy Type Wing. Information addressees shall also include the ship/station where the FOD incident occurred and where discovered, concerned Commander Task Force/COMFAIR, the activity to which the engine is transferred, and the ISSC of the engine. Marine Corps activities shall also include cognizant Commanding General Marine Force as information addressee. Activities operating from aviation ships or aviation capable ships shall include the concerned surface type commander as an information addressee.

c. Report internal engine failures via the MDS, per [Chapter 15](#). If flight safety is involved, report to the engine ISSC via HMR/EI request. The unit ASO or DOSS will determine if a Hazard or Mishap Report is required per OPNAVINST 3750.6.

d. Make Miscellaneous/History page entries in the engine AESR or MSR indicating the extent, cause, and disposition of FODed engines. Include in the AESR entry, the VIDS/MAF (OPNAV 4790/60) JCN, and the SERNO and DTG of the Engine FOD Incident Report ([Figure 10.11-1](#)).

e. Establish and enforce effective aircraft/engine fastener control procedures. The QA Division shall investigate the cause(s) of missing or loose fasteners, maintain a database for trend analysis per Type Wing/MAW directive, and take immediate action to correct or eliminate those causes.

f. Ensure a FOD inspection is performed on aircraft which have completed phase maintenance, extensive corrosion control inspection, engine repair, engine or major component change, and after extended downtime in excess of thirty days.

NOTE For loose or missing fasteners on aircraft or an item of SE at the O-level and I-level/FRC, the discrepant fastener shall be marked and documented on a MAF.

10.11.3.5 IMAs shall:

a. Screen the AESR/MSR of all non-RFI engines/modules for FOD related entries.

- b. Inspect all engines inducted for inspection or repair for evidence of FOD. For engines FODed, identify the actual or evidenced foreign object(s) involved, using residual material recovered, location, pattern, distribution, type, and extent of damage to fan/compressor/turbine sections.
- c. Report FOD incidents discovered but not occurring at the IMA, for example, lacking O-level VIDS/MAF (OPNAV 4790/60), AESR entries, or copies of Engine FOD Incident Reports. The IMA shall submit an Engine FOD Incident Report to document the FOD with the last engine operating activity as an information addressee.
- d. Provide cause of FOD feedback to originator, addressees, and activities listed on the Engine FOD Incident Report.
- e. Submit Engine FOD Incident Reports, per [subparagraphs 10.11.3.4 a through d](#), for FOD incidents occurring while operating an engine on a test cell/stand.
- f. Assist supported activities FOD prevention/investigation teams in FOD mishap investigation efforts.

10.11.3.6 The MO shall:

- a. Designate, in writing via the MMP, a FOD Prevention Program Manager.
- b. Review applicable CSEC reports and provide direction (as appropriate).
- c. Establish and assign, in writing, a FOD Prevention/Investigation Team consisting of the FOD Prevention Program Manager, QA Officer, Safety Officer, FOD Prevention Program Monitor, and additional members with expertise (as required) to investigate FOD mishaps.

10.11.3.7 The Program Manager/FRC Activity shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be knowledgeable of OPNAVINST 3750.6 and this instruction, and provide indoctrination and follow-on training for all assigned personnel, regardless of their rate. Training shall be tailored to assigned aircraft, engine, and SE FOD hazards, individual operating and maintenance environmental conditions, and shall emphasize the importance of aircraft, engine, and SE fastener control. FOD training shall include an explanation of what FOD is, how and where it occurs, and its consequences. Personnel should be shown how their job relates to the FOD Prevention Program. Training should focus on areas which have FOD causing potential as well as prevention methods that can be employed. They should know what actions they can take to prevent FOD and be able to identify conditions which, if left uncorrected, could cause FOD. Additionally, FOD prevention training shall be included in the driver training syllabus for all personnel who operate self-propelled vehicles on the flight line. Ensure assigned personnel receive indoctrination training, encompassing the importance of the FOD Prevention Program and fastener control procedures.
- b. Use CSEC information and reports (provided by the Program Monitor) to aid in identifying specific areas of concern and to determine corrective action for program improvement.
- c. Maintain a program file to include:
 - (1) Engine FOD Incident Reports (to be retained for 2 years).
 - (2) T/M/S FOD historical data (as required).
 - (3) Cause of FOD feedback reports (if applicable).
 - (4) Applicable POCs.

(5) Program related correspondence and message traffic.

(6) Applicable references or cross reference locator sheets.

d. For O-level activities, to include stations and MAGs, develop local command procedures (as required) per [Appendix D](#), in concert with the Safety Officer.

e. For IMAs/FRCs, develop local command procedures (as required) per [Appendix D](#), in concert with the station, MAG, or ship FOD Prevention/Safety Officer. Routinely spot check selected areas, such as parking ramps, turn-up areas, work spaces, taxiways, runways, flight decks, catwalks, test cell areas, hangar bays, runway and flight deck cleaning equipment and procedures, and SE.

f. Ensure each engine FOD incident is investigated and an Engine FOD Incident Report is submitted for each reportable FOD. If the cause cannot be determined at the O-level, use of the supporting activity's (IMA/MALS) FOD Prevention/Investigation Team is mandatory. An EI shall not be requested until the supporting activity has completed its investigation. Coordinate with the squadron, IMA/FRC, Wing, MAG, station, or ship FOD Prevention Officer to ensure FOD walkdowns are scheduled and performed on a daily basis in spaces and areas for which an activity is responsible.

NOTE: All activities performing daily flight operations shall ensure FOD walk down is conducted prior to the first flight of the day, and subsequently through out the day as required.

g. Routinely spot check selected areas, such as parking ramps, turn-up areas, work spaces, taxiways, runways, flight decks, catwalks, test cell areas, hangar bays, runway and flight deck cleaning equipment and procedures, and SE.

h. Coordinate with the Wing, MAG, station, or ship FOD Prevention Officer to ensure FOD walkdowns are scheduled and performed on a regular basis in spaces and areas for which an activity is responsible. Review and take appropriate action on QA recommendations concerning missing or loose fasteners and FOD Program deficiencies identified to correct or eliminate the cause(s).

i. Ensure FOD prevention is part of all QA inspections. Maintain cleanliness of build-up, production and manufacturing areas during the performance of work.

j. Review and take appropriate action on QA recommendations concerning missing or loose fasteners and FOD Program deficiencies identified to correct or eliminate the cause(s). Establish procedures and processes for the thorough inspection and cleaning of components, assemblies, and completed products.

k. Establish and maintain a TCP.

l. Require proper use and care of assembly and equipment protective devices including stringent use of masking materials.

m. Protect the end product and its components during handling, installation, and operation.

n. Require all personnel to identify and properly dispose of potential foreign objects.

o. Ensure effective foreign object prevention practices are followed throughout all aspects of production, handling, test, and storage.

p. Ensure FOD walkdowns are scheduled and performed on a daily basis on all flight areas, engine test facilities, and adjacent aprons. Monitor FOD walkdowns to ensure maximum participation, and analyze collected FOD for possible trends.

q. Ensure aircraft compartments and hidden areas are verified to be free of foreign objects before closure. Inaccessible areas found to contain foreign objects that are not removable will be noted by a logbook entry. Conduct foreign object inspections of all closed areas, entrapment compartments, and migratory routes prior to final sealing. The approval of personnel designated to perform the quality verification/inspection functions must be obtained before closing designated critical areas and any compartment. If subsequent access should be required, prior certification shall be voided and the area, compartments, and routes shall be re-inspected, re-verified, or recertified (as necessary) prior to closure.

r. Develop plans, procedures, schedules, and controls needed to ensure attainment of a viable FOD Prevention Program.

NOTE: COMFRC activities shall introduce a FOD Prevention Publicity Program and an Incentive Awards Program. Cooperative programs in FOD prevention between organizational units are strongly encouraged.

s. Ensure each engine FOD incident is investigated and an Engine FOD Incident Report ([Figure 10.11-1](#)) is submitted within 5 working days after discovery for each reportable FOD incident meeting the criteria of this instruction.

NOTE: If the cause cannot be determined at the O-level, use of the supporting activity's (IMA/FRC) FOD Prevention/Investigation Team is mandatory. An EI shall not be requested until the supporting activity has completed its investigation.

t. Report internal engine failures if flight safety is involved to the engine ISSC via HMR/EI request, and if appropriate, via the Hazard/Mishap Report System per OPNAVINST 3750.6.

u. Make Miscellaneous/History page entries in the engine AESR or MSR indicating the extent, cause, and disposition of FOD'ed engines.

NOTE: O-level and I-level/FRC include in the AESR entry, the VIDS/MAF (OPNAV 4790/60) JCN, and the SERNO and DTG of the Engine FOD Incident Report ([Figure 10.11-1](#)).

v. Ensure FOD inspections are part of the QA inspection process of all aircraft, aircraft equipment, and SE which have completed IMC, phase maintenance, extensive corrosion control, aircraft engine repair or modification by FRC or contract field teams, engine or major component change, or after extended down time in excess of 30 days.

w. Ensure work spaces are routinely spot checked for evidence of program support, such as FOD containers and posters.

x. Ensure personnel account for each tool, item of SE and part used in the repair of equipment before installing, operating, or activating.

10.11.3.8 The QA Officer shall:

a. Designate, in writing via the MMP, a QAR as the FOD Prevention Program Monitor. This assignment does not preclude other QARs from monitoring this program, but places overall responsibility with one individual.

b. Ensure FOD inspections are part of the QA inspection process of all aircraft, aircraft equipment, and SE which have completed phase maintenance, extensive corrosion control, aircraft engine repair or modification by D-level or contract field teams, engine or major component change, or after extended down time in excess of thirty days.

10.11.3.9 The Program Monitor/FRC shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Review applicable CSEC information and reports, and provide appropriate recommendations to the Program Manager.
- c. Assist in preparing NAMDRP reports.
- d. Brief contractor and field maintenance teams regarding the FOD Prevention Program requirements and ensure disparities are reported to the Program Manager.
- e. Monitor FOD walkdowns to ensure ALL HANDS participation, and analyze collected FOD for possible trends.
- f. Investigate the cause(s) of missing or loose fasteners, and review recommendations for corrective action with the Program Manager.

NOTE: The Aviation Safety Program and DLQP at each selected FRC shall monitor the FOD Prevention Program and will perform periodic audits, investigations, and verifications.

10.11.3.10 Division officers shall:

- a. Be responsible for assisting the Program Manager in implementing, enforcing, and managing the FOD Prevention Program.
- b. Ensure work spaces are routinely spot checked for evidence of program support, such as FOD containers and posters.
- c. Ensure personnel are informed of and comply with program requirements.

10.11.3.11 Work center supervisors/FRC shall ensure:

- a. FOD Prevention Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.
- b. Personnel assigned are informed of and comply with the FOD Prevention Program and keep the work area and all SE free of foreign and loose objects.
- c. Personnel perform thorough pre-maintenance and post maintenance inspections of tool containers, ducts, plenum chambers, crevices, engine cavities, and work areas.
- d. Personnel account for each tool, item of SE and part used in the repair of equipment before installing, operating, or activating.
- e. Personnel perform preoperational inspections of all assigned SE to verify material integrity.
- f. Personnel install closures or duct covers when not actively engaged in maintenance on or adjacent to gas turbine engines.
- g. FOD containers are appropriately marked, covered, and readily accessible within assigned spaces.

- h. Maximum participation in FOD walkdowns.
- i. All FOD hazards are reported to Maintenance Control/Production Control and the FOD Prevention Program Manager.
- j. In the case of loose or missing fasteners on aircraft or an item of SE, the discrepant fastener shall be marked and documented on a VIDS/MAF (OPNAV 4790/60).
- k. Personnel entering/leaving the flight deck/flight line area thoroughly check personal equipment for missing/loose parts.

NOTE For loose or missing fasteners on aircraft or an item of SE at the O-level and I levels/FRC, the discrepant fastener shall be marked and documented on a MAF.

COMNAVAIRFORINST 4790.2A
15 Feb 2008

FM ORIGINATOR
TO AIRCRAFT CONTROLLING CUSTODIAN
INFO COMNAVAIRFOR SAN DIEGO CA//N422C//
COMNAVSAIRSYSCOM PATUXENT RIVER MD//AIR-6.6.5//
COMNAVSAFECEN NORFOLK VA//12//
OTHER ADDRESSEE(S) (SEE CHAPTER 10 PARAGRAPH 10.11.3.4.b)

BT
UNCLAS //N04790//
MSGID/GENADMIN/-//
SUBJ/(COMMAND SUBMITTING INITIAL OR SUPPLEMENTAL REPORT) ENGINE FOD INCIDENT REPORT SERIAL NUMBER
(SEQUENTIAL NUMBER WITHIN EACH CALENDAR YEAR FOLLOWED BY LAST TWO DIGITS OF CALENDAR YEAR) (USE
SEQUENTIAL NUMBERING REGARDLESS OF WHETHER THIS IS AN INITIAL OR SUPPLEMENTAL REPORT) EXAMPLE OF
SUBJECT LINE: VA-100 ENGINE FOD INCIDENT REPORT SERIAL NUMBER 03-97//
REF/A/DOC/COMNAVAIRFOR//01FEB2005//
REF/B/DOC/-/-//
NARR/REF A IS COMNAVAIRFORINST 4790.2//15 FEB 2008//
POC/(SENIOR MEMBER OF FOD INVESTIGATION TEAM) NAME/RANK/CODE/PHONE
RMKS/1. SUMMARY (SUMMARIZE CONTENTS OF REPORT IN 2 LINES OR LESS)
2. DATA:
A. AIRCRAFT
(1) TYPE/MODEL/SERIES
(2) BUREAU NUMBER
B. ENGINE(S)
(1) TYPE/MODEL/SERIES
(2) SERIAL NUMBER(S)/PSSN(S) (IF APPLICABLE)
(3) INSTALLED POSITION(S) AT THE TIME OF FOD, IF UNINSTALLED N/A
C. JULIAN DATE(S)/TYPE OF LAST MAINTENANCE
(1) ON AIRCRAFT
(2) ON ENGINE(S)/MODULE(S)
D. LOCATION OF ENGINE(S) AT TIME OF FOD (FOR EXAMPLE, MCAS MIRAMAR,OCEANA, CV-62 DEPLOYED,
FRCSE JACKSONVILLE TEST CELL)
E. EMPLOYMENT OF UNIT AT TIME OF FOD (FOR EXAMPLE, REFTRA, FLEETEX, WEAPONS DET, ORANGE AIR)
F. JULIAN DATE FOD DISCOVERED
(1) WHERE DISCOVERED (FOR EXAMPLE, LINE, FLIGHT DECK, IMA/FRC, TEST CELL)
(2) HOW DISCOVERED (FOR EXAMPLE, DAILY, PRE-INDUCTION INSPECTION, TURNAROUND)
G. DISPOSITION OF ENGINE(S)/MODULE(S) (FOR EXAMPLE, BLENDING, I-LEVEL TURN IN, RETURN TO DEPOT)
(INDICATE NEXT RECEIVING ACTIVITY)
H. PREVIOUS ACTIVITY OPERATING ENGINE(S)/MODULE(S). IF A FACTOR (FOR EXAMPLE, FOD DISCOVERED
UPON RECEIPT) INDICATE IF FOD AESR ENTRY WAS MADE
I. OTHER REFERENCE(S) TO SAME FOD INCIDENT
(1) ETR SERIAL NUMBER(S) (ENSURE ENGINE FOD INCIDENT REPORT SERIAL NUMBER(S) IS/ARE INCLUDED IN
THE REMARKS SECTION OF THE ORIGINAL ETR LISTING REASON FOR REMOVAL CODE 5C OR 5D). NOTE: REASON
FOR REMOVAL CODE 3Q SHALL NOT BE USED FOR ENGINES DAMAGED BY INGESTION OF FOREIGN OBJECTS.
(2) JCN(S) (ENSURE ENGINE FOD INCIDENT REPORT SERIAL NUMBER IS INCLUDED IN DISCREPANCY FIELD OF
TURN-IN VIDS/MAF.)
(3) OTHER APPLICABLE MSG DTGs (LIST SEPARATELY)
3. COSTS DATA
A. ENGINE(S) REPAIR COST (BASED ON CURRENT NAVSAFECEN MSG OF REPORTABLE ENGINE(S) REPAIR COST)
B. AIRCRAFT DAMAGE COST (BASED ON P&E REPORT, OTHERWISE N/A)
C. TOTAL INJURY COST (REFER TO APPENDIX 4B OF OPNAVINST 3750.6)
D. OTHER PROPERTY DAMAGE COST
E. TOTAL COST (TOTAL OF A, B, C, AND D ABOVE)
4. INVESTIGATION
A. DESCRIBE EVIDENCE
B. ANALYSIS OF EVIDENCE
C. ACTUAL FOREIGN OBJECT INGESTED (IF KNOWN)
D. SUSPECTED FOREIGN OBJECT INGESTED IF ACTUAL IS UNKNOWN.(DO NOT REPORT UNKNOWN)
5. DATE/SERIAL NUMBER OF LAST FOD INCIDENT MESSAGE
6. CORRECTIVE ACTION
A. LOCAL CORRECTIVE ACTION TAKEN TO PREVENT RECURRENCE
B. RECOMMENDED CORRECTIVE ACTION IF BEYOND THE CAPABILITY OF THE ORIGINATOR TO IMPLEMENT
CORRECTIVE ACTION
7. COMMANDING OFFICER'S COMMENTS//
BT

Figure 10.11-1: Engine FOD Incident Report Format

10.12 Tool Control Program (TCP) (NAMPSOP)

10.12.1 Introduction

10.12.1.1 The TCP establishes policy and responsibilities for implementing, maintaining, controlling, storing, replacing, and inventorying common hand tools.

10.12.1.2 Reference. NAVAIR 17, Tool Control Manuals (series).

10.12.2 Discussion

10.12.2.1 The TCP is applicable to all Navy and Marine Corps O-level and IMA/COMFRC activities performing or supporting aircraft maintenance. The TCP shall apply to all commercial and other government activities performing contract maintenance, production, or other support functions on naval aircraft. This program provides instant inventory capability through internally configured tool containers with each tool positioned in an individually tailored location. The primary objectives of the TCP are the enhancement of safety by eliminating accidents and equipment damage attributed to uncontrolled tools and minimizing tool replacement costs. An effective TCP is the responsibility of all maintenance personnel and all levels of the chain of command.

10.12.2.2 The ISSC for the TCP is: COMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 4.8.6.10, HWY 547, LAKEHURST NJ, 08733-5091, DSN 624-7139 or COMM (732) 323-7139.

10.12.2.3 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.12.3 Responsibilities; O-Level, I-Level, and COMFRC Activities

10.12.3.1 ACCs/TYCOMs may designate subordinate activities as Tool Control Model Managers for specific T/M/S aircraft. To reduce the administrative burden of processing TCM changes/deviations through multiple wings, expedite handling, and effectively use their expertise, model managers shall:

- a. Review all deviation requests and approve/disapprove as appropriate.
- b. Screen change recommendations for technical content and fleet wide applicability. Maintain a copy for standardization and forward to NAVAIRWARCENACDIV Lakehurst, NJ, or return to originator disapproved.

10.12.3.2 The MO/FRC Equivalent shall:

- a. Develop local command procedures for the TCP (as required) per [Appendix D](#). The local command procedures shall outline a comprehensive, integrated, and monitored TCP in areas where tooling is required for the performance of aircraft, aircraft component, and related equipment maintenance, rework, and installation. Adequate levels of tool control shall be determined by FOD potential. When the potential for foreign objects is less likely and the work is being performed at a depot facility, a less stringent level of control may be used in specified areas. Additionally, each TCP shall assign specific responsibilities and procedures outlined in command directives and this instruction to:

- b. Designate, in writing via the MMP/SME listing, the Material Control Officer/FRC equivalent as the TCP Manager.

c. Ensure all TCM changes/deviations are processed via the Tool Control Model Managers, if assigned, prior to submission to the ISSC via appropriate ACC/TYCOM.

d. Not release aircraft/equipment for flight/operation, in the event a tool or part of a tool is missing and not recovered, until an investigation is conducted to confirm the tool/tool part is not in the aircraft/equipment. O-level and FRC activities will use the Missing/Broken/Worn Tool Report (Figures 10.12-1 and 10.12-2) or an equivalent FRC form. During the absence of the MO/FRC equivalent officer, the AMO/FRC equivalent shall perform this function.

NOTES: 1. For shore AIMDs this responsibility may be delegated to the Assistant OINC or MMCO.

2. D}_____.

e. Coordinate with the NATOPS Officer to ensure all aircrew are thoroughly trained in TCP procedures for in-flight maintenance and maintenance performed on the aircraft at other than home station.

10.12.3.3 The Weapons Officer shall establish tool control procedures for AWSE, as described in this instruction, and provide a final copy of the Missing/Broken/Worn Tool Report (Figures 10.12-1 and 10.12-2) to the I-level QA.

10.12.3.4 The AMO/Industrial Training Department shall:

a. Provide initial, follow on, or as needed TCP training to all aviation maintenance personnel. Training shall place emphasis on personnel TCP responsibilities and missing tool procedures. Document TCP training within the individual's training jacket or qualification/certification record.

b. Schedule follow-on tool control training as necessary.

10.12.3.5 The MMCO/Production Control Officer shall:

a. Establish tool control centers (as required).

b. Develop a local tool control plan to consolidate tools from each TCM if assigned to an activity with more than one T/M/S aircraft.

c. Determine the tool containers and tools necessary to perform repetitive tasks in each work center and develop a TCP for IMAs and activities without an established TCM. Test station drawers, wall lockers, and roll around tool containers, which are securable and provide sight inventory when opened, shall be evaluated by the TCP Manager and approved/disapproved for use. Be the approving authority to add, delete, or modify tool containers per a Tool Container Change Request (Figure 10.12-3).

d. Assume the responsibilities of the TCP Manager if a Material Control Officer is not assigned.

10.12.3.6 The Program Manager/Coordinator shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Designate a TCP Coordinator/SME.

b. Ensure proper operation of the tool control center.

c. Review all AFM Fund (OFC-50) requisitions or allocated FRC OM&N funding requisitions submitted by the TCP Coordinator for the purchase of replacement and spare tools to ensure unauthorized or excess tools are not purchased.

d. Ensure all SERVMART shopping lists are screened prior to, and at the completion of, shopping to ensure no unauthorized purchases are made.

e. Review TCP inventories and CSEC reports.

f. Plan and budget funds for the procurement of approved tool containers and hand tools.

g. Ensure TCP procedures are established and complied with in all areas involving work on aircraft, systems, and components.

10.12.3.7 The TCP Coordinator/SME shall:

a. Be directly responsible to the Program Manager.

b. Implement and maintain tool control procedures per NAVAIR 17 series and this instruction.

c. Issue tool containers by container number to the Work Center Supervisor using a Controlled Equipage Custody Record (NAVSUP 306). Obtain the Work Center Supervisor's signature for each tool container number assigned.

d. Account for replacement tools.

(1) Issue replacement tools on a one-for-one exchange basis and only for properly marked tools.

NOTE: O-level, I-Level, and FRC activities shall issue replacement tools upon receipt of approved Missing/Broken/Worn Tool Report (Figures 10.12-1 and 10.12-2), or an equivalent FRC form.

(2) Ensure a record is maintained that outlines replacement tool nomenclature, document number, tool report number, tool container number, status of requisitions, and date received/issued.

(3) Establish replacement tool inventory records detailing NSN/PN, nomenclature, and quantity on hand. Maintain inventory accuracy when tools are replenished/issued.

(4) Ensure an accurate inventory of replacement tools is maintained.

(5) Establish a permanent tool marking system. Tools used on aircraft and in FOD critical areas shall be etched so they can be readily identified to a specific source. They shall be etched with the activities identifier/organization code per the Organization Code Listing (A7065-01) and have a unique number/designator that represents a tool rollaway, toolbox, tool container, or tool crib. Tools too small to be etched will be kept in silhouetted containers with an inventory list identifying them.

NOTE: Replacement tools will have the same markings as the original tool, including a method to distinguish second and subsequent replacements.

e. Provide all SERVMART lists and tool requisitions to the TCP Manager prior to shopping or placing tools on order. Provide document numbers to the Work Center Supervisor/Tool Control Representative. Follow up monthly with Material Control/Supply Department on outstanding tool requisitions.

f. Coordinate activity change/deviation and TPDR requests (O-level, I-level, and FRC activities). Maintain approved deviations as long as they are in effect. Investigate and approve or disapprove, in writing, all requests to modify, add, or delete tools to/from existing tool containers.

g. Conduct semiannual/annual tool container inventories with the Work Center Tool Control Representatives or FRC equivalent. Reconcile/document semiannual/annual inventories with master inventories to ensure no unauthorized additions/deletions to tool containers have occurred.

h. Review CSEC TCP reports for tool control discrepancies.

i. Provide command indoctrination and follow-on tool control training.

j. Maintain a Program File to include:

(1) An inventory list for spare/subcustody tools to include those tools maintained in satellite tool rooms.

(2) Completed Missing/Broken/Worn Tool Reports (Figures 10.12-1 and 10.12-2) or FRC equivalent form.

(3) List of primary/alternate tool control representatives.

(4) Outstanding and completed change/deviation requests as long as they are in effect.

(5) A master copy of each individual tool container inventory and photograph/diagram with the Controlled Equipment Custody Record (NAVSUP 306) (only IMAs and activities not on an established TCM). One master copy of container inventory and diagram may be maintained for multiple identical tool containers used by the same work center.

k. Ensure proper disposal of broken/worn tools. Maintain in locked container and eradicate all etching from tool prior to disposal.

l. Attempt to redistribute tools that are no longer required prior to DRMO disposal.

m. Establish and maintain custodial controlled and properly operated centralized tool control centers (as required). Visually inventory special tool kits checked out from and returned to a centralized tool room. Tools not already in TCP approved containers will be checked out from a centralized tool area and will be returned immediately after use. Employee-owned tools shall not be authorized for use.

n. Design and manufacture rapid inventory tool containers. The position of each tool shall be silhouetted. The silhouetted outline will highlight each tool location within the container. Silhouetting may be accomplished by use of paint, etching, or other similar methods, which do not contribute to FOD or become a system contamination hazard. Each tool location shall be listed with a corresponding number on the inventory list. Procure or modify existing containers to provide control and mark for identification. Issue, maintain, and replace all authorized tool containers. This includes all tool containers needed to process aircraft and related components and equipment.

NOTE: Ensure all Tool containers used for maintenance, servicing of any aircraft, engine, or SE in the physical custody of the depot, or serviced at on-site locations by depot field service teams are incorporated into the command's TCP.

o. Maintain a log/tool custody inventory record that includes an inventory of all tools for each tool container configuration. Each specific tool container will require an inventory list for verification. Only those tools on the inventory list shall be kept in the tool container.

p. Monitor the effectiveness of the command's TCP through audits, process improvement studies, investigations, surveys, and verification efforts. Forward program related findings to appropriate management and supervisory personnel for determination of needed corrective actions or improvements.

10.12.3.8 The QA Officer shall designate, in writing via the MMP, a QAR as the TCP Monitor. This assignment does not preclude other QARs from monitoring this program but places the overall responsibility with one individual.

10.12.3.9 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
 - b. Assist/conduct missing tool investigations and annotate findings on the Missing/Broken/Worn Tool Report ([Figures 10.12-1](#) and [10.12-2](#)), or FRC equivalent form.
 - c. Establish and maintain a log to assign a report number to each Missing/Broken/Worn Tool Report. A sequential numbering system shall be used and consist of year, type of report, and serial number, for example, 95-M001 (M = missing), 95-B002 (B = broken), or 95-W003 (W = worn). The logbook shall contain, at a minimum, the following information: report number, calendar date, initiated by, work center, tool box/item number, nomenclature, investigator assigned, and final disposition.
 - d. Report tools received bad/defective from Supply or tools of poor quality on a CAT II PQDR per [paragraph 10.9](#).
 - e. Brief and monitor work performed by R}FRC field teams, contractor maintenance teams, or AIMD/MALS maintenance personnel, detailing on arrival TCP, FOD policies, conditions of the contract, and associated specifications. Conduct beginning and final inventories of tools, IMRL and consumables using [Figure 10.12-4](#) or equivalent form for FRC activities. QA shall annotate in-process on the squadron's MAF/WO, stating that all tools/IMRL/consumables were accounted for. If the volume of tools preclude a practical inventory, a modified procedure is authorized where the field team leader lists each tool used and certifies accountability following work accomplishment. Maintain the form on file for 1 year.
- NOTE: On-site FRC IMC/P teams will be briefed by the Wing and monitored by the FRC quality representative. Hosting activities shall brief depot field teams/contractors on the TCP ([Figure 10.12-4](#)) and their local command procedures before work is started. The depot field teams/contractors shall comply with the TCP and the local command procedures of the hosting activity.**
- f. Conduct spot checks of work in progress to verify compliance with the TCP.

10.12.3.10 D}_____.

FOD check has been completed by a CDI/QAR, the item is "CERTIFIED FOD FREE". The hard copy of the work request shall accompany the original MAF (IMA only).

10.12.3.11 Division officers shall:

- a. Ensure division personnel comply with TCP directives and procedures.
- b. Ensure proper security and control is maintained over all tools and equipment assigned to the division. Positive key control of tool containers and divisional tool rooms shall be maintained at all times.
- c. Ensure formal TCP training is conducted upon indoctrination and as required by the AMO.

10.12.3.12 O-level, I-level, and FRC activity work center supervisors shall:

- a. Ensure Tool Control Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record.
- b. Be responsible to the Division Officer for an effective TCP.
- c. Initiate corrective action when the TCP is not adhered to.
- d. Initiate action for additional tool requirements
- e. Assign a Work Center Tool Control Representative.
- f. Inventory all tool containers, special tools, and PPE at the beginning and end of each shift and document change of shift inventories using a logbook, such as a passdown log. Ensure tool containers are FOD free at all times.
- g. Ensure all tool containers are locked or secured when not in use.
- h. Note the tool container number on Copy 1 of the MAF in the Tool Box block upon task assignment. The supervisor or CDI and the technician shall do a sight inventory prior to starting each task and at each work stoppage. After maintenance has been completed and before an operational systems check, the inspection process shall once more be performed.

NOTE: NTCSS Optimized OMA NALCOMIS allows the ability to delete the tool box number and initials on the WO after the CDI has initialed the appropriate data fields. This permits personnel with a QAR, CDI, or work center supervisor SMQ to delete and reenter the corrected data in the tool box number and initials data fields. Work center supervisors, QARs, and CDIs shall ensure that any changes to the Tool Box data field are strictly controlled.

- i. Ensure all personnel are familiar with missing/broken/worn tool reporting procedures.
- j. Ensure a Tool Container Shortage List (Figure 10.12-5) is maintained within each tool container, excluding tool pouches and ESD work center's tool containers.
- k. Ensure tool control within the ALSS Division is enforced per paragraph 10.12.5.
- l. Submit Tool Container Change Requests (Figure 10.12-3), Tool Control Manual Change/Deviation Requests (Figure 10.12-6), or TPDRs (as applicable) for changes/deviations to tool containers.

m. Accompany the QAR during audits. Correct minor discrepancies immediately, and major discrepancies requiring significant remedial action expeditiously.

10.12.3.13 Aircrew shall:

- a. Be thoroughly familiar with the TCP.

NOTE: The flight engineer, crew chief, or senior maintenance man (in the absence of an assigned crew chief) shall assume those responsibilities of the Work Center Supervisor applicable to the TCP for in-flight maintenance or maintenance performed on the aircraft at other than home station.

- b. Ensure tool containers are FOD free at all times.
- c. Perform the following when a missing tool is reported:

(1) Notify the pilot that a tool is missing, initiate a Missing/Broken/Worn Tool Report (Figures 10.12-1 and 10.12-2) or FRC equivalent form, and conduct a thorough search of the aircraft. The Missing/Broken/Worn Tool Report will be completed at the end of the flight if the tool is discovered missing in flight.

(2) The flight engineer, crew chief, or senior maintenance man (in the absence of an assigned crew chief) will assist/conduct missing tool investigations and annotate findings on the Missing/Broken/Worn Tool Report (Figures 10.12-1 and 10.12-2) or FRC equivalent form.

(3) If not airborne, ground the aircraft until completion of the missing tool investigation. In the event a tool or part of a tool is missing and not recovered, the pilot shall release the aircraft only after an investigation is conducted to confirm the missing tool/tool part is not in the aircraft.

(4) Upon return to home station, notify Maintenance Control that a missing tool was not located and give them the completed Missing/Broken/Worn Tool Report (Figures 10.12-1 and 10.12-2) or FRC equivalent form.

10.12.3.14 Work Center Tool Control Representatives shall:

- a. Be responsible to the Work Center Supervisor for all matters concerning the work center TCP.
- b. Maintain tools and tool containers assigned to the work center and ensure containers are FOD free at all times.
- c. Conduct semiannual tool container inventories with the TCP Coordinator and provide the inventory results to the TCP Coordinator, via the Work Center Supervisor, for reconciliation with the master inventory.
- d. Ensure replacement tools are etched with the ORG code, work center, and tool container number upon receipt from TCP Coordinator.
- e. Provide assistance to the Work Center Supervisor in the preparation of the following:
 - (1) TPDRs (O-level).
 - (2) Tool Control Manual Change/Deviation Requests (O-level).
 - (3) Tool Container Change Requests (I-level).
 - (4) Missing/Broken/Worn Tool Reports/equivalent form (O-level, IMA/FRC).

f. Maintain a TCP file for all information pertaining to the work center TCP, to include:

(1) Inventories/diagrams for tool containers and special tools.

(2) Change/deviation requests.

(3) A listing of tools on order which includes tool report number, tool container, nomenclature, document number, and status.

10.12.3.15 FRC artisans shall:

a. Conduct a daily visual inspection of all assigned tool containers.

b. Record each inventory in a log and include:

(1) Date and time inventoried or inspected.

(2) BUNOs of all aircraft worked.

(3) The legible signature or certification stamp imprint of the individual who did the inventory or the inspection.

c. Document tool control in NALCOMIS or on a MAF (as applicable) when:

(1) Artisans are assigned to FRC sites to interdict workload.

(2) Maintenance tasks are assigned, at work stoppage, prior to system check, upon job completion or when a change of maintenance task occurs.

(3) In compliance with tool control procedures applicable to the FRC sites to which they are assigned.

d. Comply with tool control procedures applicable to the FRC site to which they are assigned.

NOTE: Signification that the artisan has successfully completed the tool inventory occurs only after signing the ACCUM WORK HOURS field on the MAF/WO or in NALCOMIS.

10.12.4 O-Level, I-Level, and FRC Activity Procedures (as applicable)

10.12.4.1 TCP Implementation

10.12.4.1.1 TCMs/local tool directives contain information that includes material requirements, tool inventories, and detailed instructions for the implementation and operation of the TCP for a specific type/model aircraft. Compliance with applicable TCMs/local tool directives is mandatory for all levels of maintenance.

NOTE: Activities with more than one T/M/S aircraft may consolidate tools from each TCM. Likewise, activities operating a single aircraft, for example, OMD/Station Operations and Engineering Squadrons, may consolidate containers to conform to their exclusive mode of operations. These consolidations shall be processed as a TCM deviation.

10.12.4.1.2 In the event a TCM does not exist for a specific T/M/S aircraft, a local TCM will be developed by the reporting custodian using other published TCMs as guidance, and submitted via the chain of command to the cognizant Wing for approval for local use and forwarding to NAVAIRWARCENACDIV Lakehurst, NJ.

10.12.4.1.3 Activities using NAVAIR 17 series shall identify the tools required using the tool inventory list provided by the TCM.

10.12.4.1.4 IMA-Afloat new construction initial outfitting begins with authentication of COSAL Part II Section C, of the Allowance Equipage Lists. Advise COMNAVAIRSYSCOM (AIR-1.2) via Allowance Change Requests for nondemand-based changes submitted per SPCCINST 4441.170. IMA-Ashore and activities not on an established TCM shall determine the tools necessary to perform repetitive tasks in each work center and develop a tool inventory list.

10.12.4.1.5 Inventory lists shall identify each tool by item number, nomenclature, specific quantity, and NSN. Tools that are multiples shall be identified in detail, for example, "stamping dye set 10 pieces plus 2 piece case total 12", or "feeler/depth gauge 14 blades", or "hacksaw with blade".

10.12.4.1.6 Etch as many tools as possible, including all pieces of a set. Inventory lists shall identify those tools too small or unsuitable to etch by the use of an asterisk (*) in the left margin, for example, in a 10 piece allen wrench set, annotate in the inventory remarks column that only the 3/32 wrench is too small to etch.

10.12.4.2 Tool Containers

10.12.4.2.1 Activities using NAVAIR 17 series shall establish tool container configuration per the TCM. Assemble supporting hardware and drill/cut required holes for holding tools securely in containers. It is essential that hardware placement, for example, clips and brackets, and drilling of holes be exactly as indicated in the drawings. If a tool is not available, do not drill/cut the required holes until the tool becomes available. Record the missing tool(s) on the Tool Container Shortage List ([Figure 10.12-5](#)).

10.12.4.2.2 IMAs and activities not on an established TCM shall determine the number of tool containers required for each work center.

10.12.4.2.3 Tool containers shall be numbered with the aviation 3M organization code, work center code, and container number, for example, AC3-110-2. If the work center is authorized more than one of the same type tool container, the additional containers shall be identified with a numerical suffix, for example, AC3-110-2-1.

10.12.4.2.4 The position of each tool shall be silhouetted against a contrasting background. The silhouetted outline will highlight each tool location within the container. Silhouetting may be accomplished by use of paint, etching, or other similar methods which do not contribute to FOD or become a system contamination hazard. Each tool location shall be numbered with a corresponding number on the inventory list.

10.12.4.2.5 The outside of the container shall include the appropriate stenciled warning, "contains tools too small to etch", "contains tools unsuitable for etching," or "OXYGEN USE ONLY" for applicable work centers.

10.12.4.2.6 Tool pouches shall be fabricated to identify each tool within a separate position. Each tool pouch shall have a flap cover that attaches securely on all edges to ensure tools do not fall out. Tool tags will not be included in tool pouches.

10.12.4.2.7 Activities using TCMs will maintain a copy of the TCM inventory list, TCM diagram, and Tool Container Shortage List ([Figure 10.12-5](#)) within all tool containers, firmly attached, so they do not become a source of FOD.

10.12.4.2.8 IMAs and activities not on an established TCM will maintain a copy of the inventory list, provided by the TCP Coordinator, and Tool Container Shortage List ([Figure 10.12-5](#)), within all tool containers, firmly attached, so they do not become a source of FOD.

NOTE: To reduce the possibility of FOD and for ESD considerations, tool pouches and ESDS work centers shall keep the inventory lists, diagrams, and shortage list in the Tool Control Representative's TCP file.

10.12.4.2.9 Ensure portable tool containers, excluding pouches and established "OXYGEN USE ONLY" containers, contain tool tags to be used to check out additional tools when required to supplement a tool container.

NOTE: Portable tool containers are to be used for performing maintenance on one aircraft/piece of equipment at a time. Tools from portable containers may not be checked out for simultaneous maintenance on multiple aircraft/equipment.

10.12.4.2.10 A shop tool container is designed to accommodate maintenance actions which require multiple or special tools. When using a portable container for a maintenance action, a tool tag from the portable container shall be used to check out a tool from the shop container. If not using a portable tool container, a shop container logbook shall be used. Ensure the shop container logbook contains at a minimum the following:

- a. Tool Issued To.
- b. Box/Item Number.
- c. JCN/MCN/JON.
- d. Time Out and Work Center Supervisor/CDI Signature.
- e. Time In and Work Center Supervisor/CDI Signature.

10.12.4.3 O-level and IMA Missing Tool Procedures

NOTE: Treat a broken tool with missing pieces as a missing tool.

10.12.4.3.1 The work center immediately notifies Maintenance Control or Production Control of a missing tool and conducts a thorough search of the work area(s).

10.12.4.3.2 A Missing/Broken/Worn Tool Report ([Figures 10.12-1](#) and [10.12-2](#)) is promptly initiated by the individual reporting the missing tool and forwarded to Maintenance Control or Production Control. Maintenance Control or Production Control shall:

- a. Notify the MO, AMO, MMCO, CVW MO, and Flight Deck Control (as applicable), and QA that a tool is missing.
- b. Upon notification of a missing tool, flag the ADB and the Aircraft Status Query/Workload Inquiry Screen/VIDS board to prevent release of the aircraft/components/engines/equipment prior to completion of the missing tool investigation. Initiate a MAF if necessary.
- c. Flag the work center status board and stop production for the job involved (IMA only).
- d. Notify supported activity, ASD S6 Division or squadron, if any equipment/component has been certified as RFI from the work center/tool container involved. Resume production only after the investigation/paperwork is completed or the tool is accounted for. If a suspect component has been delivered to a supported activity, it shall be turned in on a work request for an internal FOD check. After an internal FOD check has been completed by a CDI/QAR, the item is "CERTIFIED FOD FREE". The hard copy of the work request shall accompany the original MAF.

10.12.4.3.3 Maintenance Control or Production Control shall forward the Missing/Broken/Worn Tool Report to QA. QA assist/conduct missing tool investigations and annotate findings on the Missing/Broken/Worn Tool Report (Figures 10.12-1 and 10.12-2).

10.12.4.3.4 Missing tools not located after the directed search, the QA investigator shall annotate the missing tool report number and sign a statement in the corrective action block of the MAF that a missing tool investigation was conducted and the tool could not be found.

10.12.4.3.5 The QA Officer based upon results of investigation will provide recommendations.

10.12.4.3.6 In the event a tool or part of a tool is missing and not recovered, the MO shall release the aircraft/equipment only after an investigation is conducted to confirm the missing tool/tool part is not in the aircraft/equipment.

10.12.4.4 FRC Missing Tool Procedures:

a. Employee will notify the immediate supervisor.

(1) All work activity in the affected area of the aircraft or system shall cease and an immediate search for the item will begin.

(2) When a tool cannot be located after completing a search, prepare and submit a written report identifying the missing tool(s) to the immediate supervisor. A locally prepared form may be used to identify data elements, for example, the BUNOs of aircraft worked on by the employee using the tool, the BUNOs of the aircraft searched, the date and time the tool was found to be lost or missing, the date and time the search was completed, the names and codes of key personnel notified or who participated in the search, whether the tool was found, and whether logbook entries were made (if required).

b. The immediate supervisor shall:

(1) Immediately notify appropriate production personnel.

(2) Identify those areas where work was or may have been performed.

(3) Stop work and begin an intensive search in the suspected areas until the missing tool(s) is/are found or permission to resume work is received from the appropriate manager. Request assistance (if required).

(4) Advise the appropriate manager, in writing, that each area and adjacent open areas have been thoroughly searched.

(5) Notify the appropriate supervisory and quality verification function personnel if the missing tool(s) has/have not been found after a thorough search and before any open areas are closed.

(6) Forward copies of the written documentation concerning the missing tool(s) as required by local directives.

(7) If the investigation fails to locate the missing tool during the same shift, inform the oncoming shift supervisors of the missing tool(s) and actions taken to locate the tool(s).

(8) Maintain a list of missing tools for each tool container.

NOTE: All missing tool investigations and associated documentation regardless of level of tool control, shall be immediately initiated and closed appropriately.

10.12.5 Aviation Life Support System(s) (ALSS) Procedures

10.12.5.1 All tools must be accounted for after the repack and inspection of each item, for example, parachutes and floatation equipment, since these items cannot be functionally checked prior to use. Upon completion of the repack/inspection for each item at the IMA, the CDI, QAR, or FRC equivalent QA supervisor stamp/SMQ in the "Inspected By" block signifies the job was performed to proper standards and that all tools used have been accounted for. The supervisor's signature certifies that screening has been performed and that the QA and TCP requirements have been complied with.

10.12.5.2 The following exceptions and considerations will be given to ALSS Tool Control:

- a. All tools shall be maintained in a clean, oil and grease free condition.
- b. All tools used on oxygen components shall be segregated with the container marked "OXYGEN USE ONLY."
- c. Long bars and fids shall not be etched. Etching could cause snagging of the canopy material.
- d. All special and locally manufactured tools shall be accounted for per the TCP.

10.12.6 General Guidelines

WARNING: DO NOT ETCH NONSPARKING NONMAGNETIC BERYLLIUM HAND TOOLS. THE ETCHING PROCESS OF BERYLLIUM HAND TOOLS GENERATES A FINE DUST OF BERYLLIUM, A KNOWN HEALTH HAZARD. AT NO TIME SHALL THESE TOOLS BE CUT, MELTED, WELDED, GROUND, OR OTHERWISE MODIFIED. IF A BERYLLIUM TOOL IS DAMAGED, DISPOSE OF PER DISPOSAL POLICIES. ENSURE TOOL CONTAINER INVENTORY IDENTIFIES SUCH TOOLS AS CONTAINING BERYLLIUM ALLOYS.

10.12.6.1 The TCP Coordinator (O-level, I-level, and FRC activities), with the assistance from the Tool Control Representative, shall etch tools contained with a container number identical to the container number assigned per [paragraph 10.12.4.2](#). Etching of tool tags shall also include the tag number. Common hand tools contained within and as part of IMRL tool kits, for example, wire repair kits, do not require etching due to the frequent transfer between activities.

10.12.6.2 Special tools, as defined in this instruction, are locally manufactured tools and tools used for shipboard damage control/3M PMS. Special tools are subject to the same positive control and inventory processes as are standard tools. Therefore, special tools held by the work center or tool room shall, where feasible, be silhouetted against a contrasting background or placed in silhouetted containers. Special tools shall be etched, inventoried, and diagrammed under the same conditions as standard hand tools.

10.12.6.3 Ensure consumable materials not included on the tool container inventory, such as safety wire, electrical tape, and acid brushes, are accounted for prior to and at the completion of each task. Tool containers shall not be used for hardware storage.

10.12.6.4 Ensure multiple piece tools containing a type of locking nut that can fall off is peened or spot welded to eliminate the possibility of FOD, for example, hex keys and feeler gauges.

10.12.6.5 O-level, I-level, and FRC activity Tool Container Shortage Lists ([Figure 10.12-5](#)) shall be used as follows:

- a. Annotate tool report number received from QA.

- b. Annotate document number received from the TCP Manager. If the tool is to be purchased from SERVMART, enter data of TCP managers next anticipated SERVMART run and the word "SERVMART".
- c. Date replaced column is annotated to indicate date of tool replacement.
- d. List tools inducted for calibration.

10.12.6.6 Tool rooms may be established as centralized points within an activity/department/division for issuance of special tools/IMRL items. Tool rooms shall follow the same positive tool control procedures as outlined in this chapter. The following guidelines apply:

- a. Establish tool room containers, for example, wall boards, drawers, and lockers. Each container and tools assigned shall be marked with organizational code, work center code, and container number. See [paragraphs 10.12.4.1](#) and [10.12.4.2](#) for examples of container markings. FRCs shall mark each container and tools assigned with the FRC identifier/organization code per the Organization Code Listing (A7065-01) and have a unique number/designator that represents a tool rollaway, tool box, tool container, or tool crib.
- b. Where feasible, tools shall be silhouetted per [paragraph 10.12.4.2.4](#). Each tool location shall be numbered with a corresponding number on the inventory list. Reflective/embossing tape shall only be used on tool room boards.
- c. Tools will be issued in exchange for a tool tag on a one-for-one basis. In the event a tool is required to be checked out by an individual without access to tool tags, tool issue procedures shall be established to ensure control and accountability are maintained.

NOTE: The Tool Room Supervisor is responsible for shift change and semiannual inventories of tools assigned to the tool room. Work center supervisors are responsible for all other inventories.

10.12.6.7 When tools are no longer required, they shall be turned in to the TCP Coordinator. FRC activities shall turn in extra/spare tools per local directives. At no time will extra/spare tools that are not part of the TCP be retained in the work centers.

10.12.6.8 Tools associated with flight packets shall be controlled and accounted for as part of the tool control plan. The TCP Coordinator shall establish Controlled Equipage Custody Record (NAVSUP 306), an inventory list, and diagram for these tools. The work center that normally issues the tools for use with flight packets shall be the responsible work center.

10.12.7 Changes/Deviations

10.12.7.1 O-level TCM Changes/Deviations. To reduce the administrative burden of processing TCM changes/deviations through multiple wings, expedite handling, and use the expertise of on-site managers, the Tool Control Model Manager concept was developed. Duties are outlined as follows:

- a. A TCM change is defined as a tool inventory or container layout diagram that is changed and is determined to have fleet-wide applications. A proposed change shall be forwarded with appropriate justification to the Tool Control Model Manager, if assigned, using Tool Control Manual Change/Deviation Request ([Figure 10.12-6](#)). Model managers recommend approval by entering a TPDR directly into the TPDR database within TMAPS on the NATEC web site. Disapproved requests shall be returned by the Tool Control Model Manager to the submitting activity with appropriate comments. Changes to the layout, content or design of a tool container shall not be made until formal authorization is received. Retain changes approved by NAVAIRWARCENACDIV Lakehurst, NJ until receipt of new TCM.

b. A TCM deviation departs from the formal TCM to meet unique operational situations. Deviation requests shall be submitted to the Tool Control Model Manager in [Figure 10.12-6](#) format. The model manager shall approve/disapprove the request. Deviations to layout, content, or design of a tool container shall not be made until formal authorization is received from the Tool Control Model Manager.

c. When a Tool Control Model Manager is not assigned, the ACC/TYCOM shall assume those responsibilities and functions.

10.12.7.2 IMAs and activities not on an established TCM requiring a change to the tool control plan shall initiate a Tool Container Change Request ([Figure 10.12-3](#)). Changes shall not be made without approval from the MMCO. The TCP Manager shall maintain the approved request on file for 1 year.

10.12.7.3 COMFRC activities shall establish local procedures for investigating, approving, and disapproving all request for modifications, additions, and deletions to/from existing tool containers using local forms.

Missing/Broken/Worn Tool Report

Report Number: _____ Date/Time: _____ / _____

Note: Complete sections A, C, and F for Broken/Worn tool reports. A missing tool requires a complete investigation and report.

A. Report Originator

Name / Rank _____	BUNO / EQUIP _____
Work Center _____	Container Number _____
Tool Nomenclature _____	Panel _____
_____	Drawer/Item _____

Circumstances:

Originator Signature

Work Center Supervisor Signature

B. Maintenance / Production Control

Notify: ____ MO, ____ AMO, ____ MMCO, ____ CVW MO (afloat), ____ Flight Deck Control (afloat), ____ QA

Flag ADB: _____ Initiate MAF: (provide MCN) _____

Remarks:

Maintenance/Production Control Signature / Date / Time

C. Quality Assurance

Investigator Assigned: _____ Date/Time: _____

Investigator report and recommendation:

Investigator Signature / Date / Time

Figure 10.12-1: Missing/Broken/Worn Tool Report

D. Quality Assurance Officer recommendation:

_____/_____/_____
Quality Assurance Officer Signature / Date / Time

E. Maintenance Officer

Aircraft released for flight /Equipment released for use?

Yes / No (circle one)

Comments

Released for Flight/Use Signature / Date _____/_____

F. Tool Control Program Coordinator

Broken/Worn Tool received by: _____ Date: _____

Tool replaced from spare Yes / No (circle one) SERVMART Item? Yes / No (circle one)

Document Number: _____ SERVMART Date: _____

Supply status:

Tool Issued:

Tool Received by:

Tool Coordinator Program Coordinator Signature / Date

Tool Control Representative Signature / Date

Figure 10.12-2: Missing/Broken/Worn Tool Report (continued)

From: _____

To: Contractor/Field Maintenance Team

Subj: CONTRACTOR /FIELD MAINTENANCE TOOL CONTROL PROGRAM (TCP) AND FOREIGN
OBJECT DAMAGE (FOD) BRIEF

Ref: (a) COMNAVAIRFORINST 4790 .2

1. Reference (a) requires Quality Assurance (QA) brief contractor/field maintenance teams on the command TCP and FOD requirements prior to maintenance actions.

2. A Quality Assurance Representative (QAR)/QA Supervisor and the contractor/field maintenance team leader shall jointly conduct a tool inventory prior to and upon completion of each maintenance assignment. The team leader shall notify QA of any additional tools introduced after the initial tool inventory. If the volume of tools precludes a practical inventory, the team leader will list each tool used to certify accountability following work accomplishment.

3. The team leader shall immediately notify QA upon discovery of a missing or broken tool. Tools broken during a maintenance action will be sighted by a QAR/QA Supervisor and all pieces accounted for.

4. I have been briefed by the activity QAR/QA Supervisor on the responsibilities of all personnel working in, on, and around aircraft/systems/component/Support Equipment with respect to proper TCP and FOD procedures. Copy of tool inventory attached.

Team Leader Signature _____ Date: _____

5. Aircraft/system /component under repair; remarks: _____

6. a. Prior to maintenance, tool containers inventoried by:

Team Leader Signature _____ Date: _____

QAR or QA Supervisor Signature _____ Date: _____

b. Upon completion of maintenance, tool containers inventoried by:

Team Leader Signature _____ Date: _____

QAR or QA Supervisor Signature _____ Date: _____

Figure 10.12-4: Contractor/Field Maintenance Team Tool Control/FOD Brief and Inventory

CONTAINER SHORTAGES

Tool Container No: _____

NOMENCLATURE DRAWER/PANEL/ITEM	TOOL REPORT NO.	DOCUMENT NO.	TOOL CONTROL REPRESENTATIVE INITIALS	DATE REPLACED	WC SUPERVISOR INITIALS

TOOLS INDUCTED FOR CALIBRATION

NOMENCLATURE DRAWER/PANEL/ITEM	DATE INDUCTED FOR CALIBRATION	TOOL CONTROL REPRESENTATIVE INITIALS	DATE REPLACED	WC SUPERVISOR INITIALS

Figure 10.12-5: Tool Container Shortage List

From: _____
To: _____

Subj: TOOL CONTROL MANUAL (TCM) CHANGE/DEVIATION REQUEST

Ref: a. COMNAVAIRFORINST 4790.2

1. Per reference (a), request to change/deviate from TCM NAVAIR: _____

a. TCM Container No.: _____

b. Deviation Requested: _____

c. Justification:

2. Point of Contact: _____

DSN: _____ Commercial: _____

FIRST ENDORSEMENT

From: _____
To: _____

Subj: TOOL CONTROL MANUAL (TCM) CHANGE/DEVIATION REQUEST

Ref: a. COMNAVAIRFORINST 4790.2

1. Per reference (a), request to change/deviate from TCM NAVAIR _____ is approved/disapproved.

2. The following circumstances apply: _____

Signature: _____ Date: _____

Copy to:
(As appropriate)

Figure 10.12-6: Tool Control Manual Change/Deviation Request

10.13 Corrosion Prevention and Control Program (NAMPSOP)

10.13.1 Introduction

10.13.1.1 The Corrosion Prevention and Control Program establishes policy, responsibilities, and requirements to minimize corrosion damage to aircraft, engines, components, and SE, and provides direction for emergency reclamation.

10.13.1.2 References:

- a. OPNAVINST 5100.19, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat.
- b. OPNAVINST 5100.23, Navy Occupational Safety and Health (NAVOSH) Program Manual.
- c. OPNAVINST 5442.2, Aircraft Inventory Readiness Reporting System (AIRRS).
- d. OPNAVINST 8000.16, The Naval Ordnance Maintenance Management Program (NOMMP).
- e. NAVAIR 01-1A-509-1, Cleaning and Corrosion Control, Volume I, Corrosion Program and Corrosion Theory.
- f. NAVAIR 15-01-500, Preservation of Naval Aircraft.
- g. NAVAIR 17-1-125, Support Equipment Cleaning, Preservation and Corrosion Control.
- h. DODINST 6050.5, DOD Hazardous Communications Program.
- i. MIL-STD-2161B(AS), Paint Schemes and Exterior Markings for U.S. Navy and U.S. Marine Corps Aircraft.
- j. OPNAVINST 3750.6, Naval Aviation Safety Program.
- k. NAVAIR 00-80T-121, Chemical and Biological Defense NATOPS Manual.
- l. FM 3-5/MCWP 3-37.3, Army Field Manual/Marine Corps Warfighting Publication, NBC Decontamination.

10.13.2 Discussion

10.13.2.1 This program applies to all Navy and Marine Corps activities, and commercial and other government activities performing contract maintenance, production, D-level, or other support functions on naval aircraft and SE. All activities shall place special emphasis on the importance of the Corrosion Prevention and Control Program and lend full support to ensure that corrosion prevention/control receives a priority for timely accomplishment, along with other required maintenance. To prevent aircraft mishaps, excessive out-of-service time, serious damage to aircraft and equipment, and a resultant reduction in readiness with increased cost, corrosion must be discovered and corrected by each level of maintenance in the very earliest stages of development. To accomplish this, responsibilities are assigned to all departments in each activity to ensure that sufficient expertise is available to perform all required inspections. Discovering and correcting corrosion in the earliest stages of development will prevent flight related mishaps, excessive out-of-service time, serious damage to aircraft and equipment, and reduction in readiness.

10.13.2.2 Detecting corrosion on hidden surfaces of aircraft, engines, components, and SE is difficult because of inaccessibility and generally can be accomplished only after disassembly. Accordingly, identifying and correcting corrosion in these areas requires special attention. Exterior corrosion is easily detected through visual means and prescribed scheduled inspection requirements.

10.13.2.3 SE Corrosion

10.13.2.3.1 Since SE structures (frame and skin) are commonly made of ferrous metals, SE is not normally susceptible to intergranular corrosion and catastrophic structural failure due to corrosion as are nonferrous metals on aircraft. However, SE end items are usually susceptible to surface/pitting corrosion and must be cleaned on a scheduled basis (as required) to preclude salt and stack gas residue/dirt and oil contaminant accumulation. Corrosion control is mandatory, and shall be performed to maintain the protective envelope on SE and not merely for cosmetic purposes. Shipboard SE requires cleaning and corrosion prevention/treatment more frequently than shore-based SE.

10.13.2.3.2 SE, AWSE, and WHE preservation is designed to protect the material condition of equipment, which is not expected to be used for extended periods of time. This equipment may be preserved at any time, regardless of material condition, when it is determined to be in the best interest of the equipment or activity. ISSCs have the responsibility to determine when this equipment is required to be placed in preservation. Equipment not placed in preservation shall receive corrosion prevention/treatment per applicable MIMs/MRCs. For standardized management of personnel and resources, activities may use the following categories to determine the level of preservation desired:

- a. Category A - SE/AWSE/WHE which has anticipated usage within the next 90 days. This equipment shall be maintained under current SE/PMS directives.
- b. Category B - SE/AWSE/WHE that could possibly be used within the next 180 days. This equipment may be placed in a minimum of Level I.
- c. Category C - SE/AWSE/WHE not needed for extremely long periods of time (in excess of 180 days) may be placed in Level II or III preservation depending on the resources at the geographical area.
- d. Levels of preservation for SE/AWSE/WHE are defined below. Dehumidification (Level III) is the preferred method of preservation.
 - (1) Level I: 0 - 90 days .
 - (2) Level II: 0 - 1 year.
 - (3) Level III: 0 - indefinite.

10.13.2.4 Corrosion recognition and reporting is an all hands responsibility. This program is designed to incorporate command, middle management, maintenance, and flight crew participation. Responsibilities are assigned to all aviation maintenance work areas to ensure sufficient expertise is available to perform all required inspections.

10.13.2.5 The term qualified as used in this chapter denotes individuals who are trained in the cleaning and repair of corrosion areas, inspection, identification, treatment, preservation, lubrication, hazardous waste disposal, and proper documentation reporting. The term qualified will also signify personnel who have completed training per [paragraph 10.13.6](#).

10.13.2.6 LMTC

a. Aircraft Weapons System Cleaning and Corrosion Control is COMMANDING OFFICER, FRCSW NORTH ISLAND, CODE 4.9.7, BLDG 469, PO BOX 357058, SAN DIEGO CA 92135-7058, DSN 735-9756 or COMM (619) 545-9756.

b. Avionics Cleaning and Corrosion Control is COMMANDING OFFICER, NAVAL AIR WARFARE CENTER WEAPONS DIVISION, CODE 4.T.4.2.E.O.D., 1 ADMINISTRATION CIRCLE, CHINA LAKE CA 93555-6100, DSN 437-2060 or COMM (760) 939-2060.

10.13.2.7 ISSC

a. SE Cleaning and Corrosion Control/Preservation is COMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION, CODE 481400B562-2, HIGHWAY 547, LAKEHURST, NJ 08733-5033, DSN 624-2716 or COMM (732) 323-2716.

b. Naval Aviation Nuclear, Biological and Chemical Defense is COMMANDER, NAVAL AIR SYSTEMS COMMAND, SYSTEM SURVIVABILITY DIVISION, CODE 4.1.8 (CHEMICAL BIOLOGICAL DEFENSE), BLDG 2187, 48110 SHAW ROAD, UNIT 5, PATUXENT RIVER, MD 20670-1906, DSN 342-3303 or COMM (301) 342-3303.

10.13.2.8 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.13.3 Responsibilities; O-Level, I-Level, and FRC Activities

10.13.3.1 The MO/Equivalent Officer shall:

a. Designate, in writing via the MMP/SME listing, a Corrosion Prevention and Control Program Manager/Coordinator.

b. Ensure corrosion prevention, evaluation, removal, arrestment, and treatment is accomplished and supervised by qualified personnel. To achieve and retain an effective Corrosion Prevention and Control Program, in-service training and formal schools shall be used to ensure personnel are capable of detecting, identifying, reporting, and treating various forms of corrosion.

c. Develop local command procedures (as required) per [Appendix D](#) to include emergency reclamation procedures/processes per [Chapter 3](#). The local command procedures shall reference NAVAIR 00-80T-121 and FM 3-5/MCWP 3-37.3 to ensure emergency reclamation team members are familiar with NBC decontamination procedures for aircraft, engines, components, and SE.

NOTE: Reporting custodians deployed to the Indian Ocean, Red Sea, Arabian Sea, and Persian Gulf shall develop local command procedures per [Appendix D](#).

d. Assign Emergency Reclamation Team members, in addition to those personnel assigned to Work Center 12C, Corrosion Control Team or production work centers, and any augmentees deemed necessary.

10.13.3.2 The Program Manager/Coordinator shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Ensure the Industrial Hygienist conducts, as part of the activity's comprehensive baseline survey, a work place assessment (walk through) and exposure assessment of all touch-up painting operations on aircraft and aeronautical equipment per OPNAVINST 5100.19 and OPNAVINST 5100.23. Permanent changes to the process or its components require a new written baseline survey.

NOTE: In the case of contractor operations/personnel, the Industrial Hygienist shall conduct a new written baseline survey prior to the work place being turned over to the contractor or DON.

b. Ensure personnel assigned duties involving opening, mixing, or application of coating materials receive preplacement training, periodic medical surveillance evaluations, and respirator fit testing/use as recommended by the Industrial Hygienist. For additional guidance, refer to OPNAVINST 5100.19 and OPNAVINST 5100.23.

c. Ensure personnel assigned duties involving exposure to potentially harmful dusts, mists, or vapors use required PPE.

d. Place special emphasis on the HMC&M Program and fully support all federal, state, local, and OPNAV environmental laws/regulations.

e. Ensure P&E requests are submitted per applicable ACC/TYCOM instructions.

f. Be knowledgeable of OPNAVINST 5100.19, OPNAVINST 5100.23, OPNAVINST 8000.16, NAVAIR 15-01-500, NAVAIR 01-1A-509-1, NAVAIR 17-1-125, DODINST 6050.5, MIL-STD-2161B(AS), OPNAVINST 3750.6, NAVAIR 00-80T-121, FM 3-5/MCWP 3-37.3, and this instruction. Ensure all personnel involved with corrosion control and emergency reclamation are thoroughly familiar with same instructions (as applicable).

g. Provide Corrosion Prevention and Control Program indoctrination training and emergency reclamation processes/procedures training.

h. Maintain a program file to include:

(1) Applicable POCs.

(2) Syllabus identifying the activity's corrosion prevention and control and Emergency Reclamation Team training requirements.

(3) Listing of maintenance personnel who have completed all required corrosion control courses.

(4) Program related correspondence and message traffic.

(5) Applicable references or cross reference locator sheets

i. Review CSEC information and reports to aid in identifying specific areas of concern and determine what steps are required for improvement.

j. Provide technical advice and assistance to all work centers in matters pertaining to corrosion prevention and control.

k. Ensure Plane Captains are trained in corrosion prevention and control and are aware of their responsibilities to identify and report corrosion.

l. Ensure aircraft paint schemes are maintained per MIL-STD-2161B(AS). Deviations shall not be made without written ACC/TYCOM approval.

m. Maintain sufficient quantities of required materials, equipment, and tools to support the Corrosion Prevention and Control Program and emergency reclamation actions/procedures.

NOTE: All hazardous material on hand to support emergency reclamation shall be retained at the CHRIMP site and will be jointly inventoried quarterly, by the Emergency Reclamation Team Leader/CHRIMP Site Supervisor, to verify that items are on hand, in the correct quantities, and within prescribed shelf life.

n. Supervise the Emergency Reclamation Team. Conduct and document quarterly training and drills to refresh team members in emergency reclamation actions. The drills shall encompass specific O-level or I-level maintenance and all emergency reclamation procedures for aircraft, engines, components, and SE, except the physical removal of components and aircraft or SE washing.

o. Ensure entries are made on the Miscellaneous/History (OPNAV 4790/25A) form in the appropriate Logbook/AESR per [Chapter 3](#), for aircraft/equipment exposed to large quantities of salt water/fire fighting chemicals.

p. Verify ultrasonic/water solution component cleaning and drying is not attempted on components and other equipment unless specified by MRCs, MIMs, or official technical data.

q. Respond to P&E requests per [Chapter 3](#) (FRC Only).

10.13.3.3 The QA Officer shall designate, in writing via the MMP/SME listing, a corrosion control qualified QAR/QA Specialist (AM senior petty officer/D-level equivalent) as the Corrosion Prevention and Control Program Monitor. This assignment does not preclude other qualified QARs/QA specialists from monitoring this program but places the overall responsibility with one individual.

10.13.3.4 The QA Supervisor (O-level and IMA only) shall monitor Corrosion Control/Treatment Reports (MDR-11) for corrosion control/treatment using When Discovered Code R percentage rates in the MDR-11 to provide guidance to QA inspectors.

10.13.3.5 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Develop and administer a written open book corrosion prevention and control CDI test, and an Artisan test (if applicable). Any QAR/QA specialist may administer the examination.
- c. Assist in preparing NAMDRP reports.
- d. Monitor/inspect aircraft, engines, components, and SE to ensure compliance with preservation procedures.
- e. Monitor Corrosion Control/Treatment Reports (MDR-11) to ensure corrosion prevention and control are accomplished by each work center during the processing of A/C, engines, components and SE.

10.13.3.6 Maintenance Control/Production Control (O-level and IMA only) shall:

a. Ensure corrosion control inspections are performed per applicable directives. Any aircraft with AWM corrosion discrepancies that are within maintenance capability shall be restricted from flight if the discrepancies are not corrected within 28 calendar days from the date of discovery. Where operational commitments preclude compliance with this directive, a waiver to defer the corrective action beyond the 28 calendar days may be granted by the ISSC via ACC/TYCOM. Waivers and extensions shall be maintained and monitored by the ISSC and ACC/TYCOM with the new required corrective action maintenance timeframes based on the ISSC/ACC/TYCOM assessment.

b. Request P&E assistance for corrosion discrepancies beyond maintenance level capability.

- c. Ensure aircraft paint schemes are maintained per MIL-STD-2161B(AS).
- d. Ensure aircraft, engines, components, and SE preservation procedures are accomplished per applicable directives.

10.13.3.7 Work center supervisors shall:

- a. Ensure Corrosion Prevention and Control Program and Emergency Reclamation indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record/artisan's electronic IQR.
- b. Ensure sufficient numbers of work center personnel are qualified in emergency reclamation procedures, and all those with corrosion prevention and control/emergency reclamation responsibilities comply with the Respirator Protection Program per OPNAVINST 5100.19 and OPNAVINST 5100.23.
- c. Report defective corrosion prevention and control materials received from Supply.
- d. Initiate corrosion control NAMDRP reports (as required).
- e. Ensure authorized corrosion prevention and control materials are used. Materials having a shelf life shall not be used when the shelf life has been exceeded.
- f. Keep current TDs, publications, and equipment available.
- g. Ensure work center personnel use authorized procedures for aircraft and equipment cleaning, corrosion treatment, and preservation.
- h. Ensure HAZMAT/HAZWASTE is handled and disposed of per current directives.

10.13.4 Procedures

10.13.4.1 O-level activities shall:

- a. Develop an effective corrosion control capability per OPNAVINST 5100.19, OPNAVINST 5100.23, OPNAVINST 8000.16, NAVAIR 15-01-500, NAVAIR 01-1A-509-1, NAVAIR 17-1-125, DODINST 6050.5, MIL-STD-2161B(AS), and OPNAVINST 3750.6 (as applicable).
- b. Utilize personnel having completed Aircraft Corrosion Control course (Course N-701-0013) or Aircraft Corrosion course (Course C-600-3183) to conduct quarterly OJT for maintenance personnel and aircrew on corrosion prevention and corrosion control to include inspection, detection, identification, treatment, and corrosion documentation using available resources and training aids.

WARNING: ORDNANCE REMOVAL/DEARMING SHALL BE PERFORMED BY QUALIFIED PERSONNEL PRIOR TO STARTING EMERGENCY RECLAMATION ACTIONS.

- c. Ensure corrosion prevention and control are accomplished and properly documented by each work center during the processing of A/C, engines, components and SE.
- d. Ensure availability of material and equipment for rapid processing and corrective action for emergency reclaimed equipment.
- e. Ensure activities assigned seven or more aircraft establish a Work Center 12C or a Corrosion Control Team.

NOTE: Marine Helicopter Squadron One Executive Flight Detachment is exempted from establishing a dedicated Work Center 12C.

f. Assign the following minimum personnel if assigned seven or more aircraft:

(1) One AM, E-6 or above, qualified aircraft painter assigned as Work Center/Corrosion Control Team Supervisor and one AM, E-5 or above, qualified aircraft painter assigned as the Corrosion Program Monitor.

(2) Two AMs, E-3 or above, qualified as aircraft painters.

NOTE: One of the above personnel shall be qualified in aircraft paint touch-up and coatings maintenance.

(3) Three personnel having completed Aircraft Corrosion Control course (Course N-701-0013) or Aircraft Corrosion course (Course C-600-3183).

g. Assign qualified corrosion control personnel to the Airframes Branch, or the equivalent, in small detachments and OMDs with fewer than seven aircraft as follows:

(1) One aircraft: Two AMs, E-3 or above, qualified as aircraft painters.

(2) Two through six aircraft: One AM, E5 or above, and two AMs, E-3 or above, qualified as aircraft painters.

h. Assign additional personnel as required to enhance each activity's Corrosion Prevention and Control Program and Emergency Reclamation Team.

10.13.4.2 I-level activities shall:

a. Develop an effective corrosion control capability for each work center per OPNAVINST 5100.19, OPNAVINST 5100.23, OPNAVINST 8000.16, NAVAIR 01-1A-509-1, NAVAIR 15-01-500, NAVAIR 17-1-125, DODINST 6050.5, MIL-STD-2161B(AS), and OPNAVINST 3750.6 (as applicable). Conduct formal training and OJT using NATEC personnel and other corrosion control training facilities.

b. Ensure corrosion prevention and control are accomplished by each work center during the processing of engines, components, and SE.

WARNING: ORDNANCE REMOVAL/DEARMING SHALL BE PERFORMED BY QUALIFIED PERSONNEL PRIOR TO STARTING EMERGENCY RECLAMATION ACTIONS.

c. Assist supported activities during reclamation actions and provide expertise and equipment not authorized at O-level activities.

d. Assist supported activities by providing expertise and equipment for corrosion repairs when requirements exceed O-level activity capability.

e. Ensure one AM, E-5 or above, and two AM personnel assigned to the Airframes Division are qualified as aircraft painters.

f. Assign one AS, E-6, and two AS personnel that are qualified aircraft painters to the Support Equipment Division

10.13.4.3 FRCs shall:

- a. Develop an effective corrosion control capability program per [paragraph 10.13.2](#).
- b. Ensure corrosion prevention and control are accomplished by each work center during the processing of engines, components, and SE.
- c. Publish and maintain local command procedures per [Appendix D](#) that outline processing procedures for reclaiming salt water or chemical damaged equipment, work area personnel assignments/duties, team personnel training program, and required materials and equipment.
- d. Assist supported activities during reclamation actions and provide expertise and equipment not authorized at O-level and IMA activities.
- e. Ensure availability of material and equipment for rapid processing and corrective action for emergency reclaimed equipment.
- f. Assign additional personnel as required to enhance the command's Corrosion Prevention and Control Program and Emergency Reclamation Team. Corrosion prevention and control-qualified artisans from the following work areas are highly recommended:
 - (1) Aircraft airframes
 - (2) Avionics
 - (3) Aircraft power plants
 - (4) Support Equipment
 - (5) Ordnance qualified personnel (if ordnance related equipment workload is assigned to the activity).

NOTE: One of the airframes team members shall be qualified in aircraft paint touch-up and coatings maintenance.

10.13.5 Recovery and Reclamation of Crash Damaged Aircraft

10.13.5.1 General procedures and basic policies for recovery, reclamation, and transfer of crash damaged aircraft are in OPNAVINST 3750.6 and OPNAVINST 5442.2.

10.13.5.2 When an aircraft crashes within the land area of a naval organization in CONUS, and subsequent to request by the reporting custodian to the CGMAW, the nearest Navy or Marine Corps air station, facility, or activity designated by the cognizant type wing/CGMAW is responsible for recovering the damaged aircraft. However, the reporting custodian furnishes officer and enlisted personnel to assist in the recovery (as requested). When a damaged aircraft is suitable for repair/rework, and if practicable, it should be inspected at the scene of the accident by a FRC P&E.

10.13.5.3 When an aircraft crashes outside CONUS, the reporting custodian notifies the cognizant COMFAIR/CGMAW, who makes necessary arrangements for disposition and, if necessary, reclamation of the aircraft. The cognizant COMFAIR also designates the station, facility, or unit that is to recover and accept physical custody of the damaged aircraft. The cognizant COMFAIR/CGMAW arranges for qualified personnel to determine the suitability of aircraft damaged outside CONUS for rework/repair or other disposition.

10.13.5.4 Disposition and salvage procedures for stricken aircraft are:

- a. When a damaged aircraft is determined to be beyond rework, the aircraft shall be reported as a category one strike per OPNAVINST 5442.2. In this case, the aircraft may be transferred to the nearest CONUS naval air activity for return to COMNAVAIRSYSCOM for custody and final disposition.
- b. When it is impractical to return the aircraft to COMNAVAIRSYSCOM FS custody, the reporting custodian shall physically transport the aircraft to the supporting supply activity designated by the ACC/TY-COM. The stricken aircraft will be reported to COMNAVAIRSYSCOM for processing per current instructions for the SARDIP. No one, other than the IMA reclamation team, is allowed access to stricken aircraft.
- c. Request for stricken aircraft/components/assemblies will be directed to CO of the salvaging activity, marked "Attention Supply Officer."

10.13.5.5 Salt Water Immersion/Fire Fighting Chemicals.

10.13.5.5.1 FRC activities shall publish and maintain a facility instruction outlining processing procedures for reclaiming salt water or chemical damaged equipment, work center personnel assignments/duties, team personnel training program, and required materials and equipment.

10.13.5.5.2 During reclamation actions, FRC activities will assist supported activities by providing expertise and equipment not authorized for O-level maintenance.

10.13.6 Training; O-level, I-Level, and FRC Activities

10.13.6.1 O-level and I-level personnel engaged in aircraft, engines, components, or SE maintenance shall complete one of the following corrosion control training courses:

- a. CENNAVNTECHTRA Basic Corrosion Control Course (Course CNATT-BCC-2.0) or Avionics Corrosion Course (CNATT-ACC-2.0) available at <https://www.nko.navy.mil>.
- b. CENNAVAVNTECHTRA Corrosion Control (Basic) course (Course C-600-3180), or Avionics Corrosion Control course (Course C-100-4176).
- c. FRC Aircraft Corrosion Control course (Course N-701-0013) or CENNAVAVNTECHTRA Aircraft Corrosion course (Course C-600-3183).
- d. Airman Apprentice Training course (Course A-950-A0078).

NOTES: 1. Maintainers completing Aviation "A" School between April 1992 and October 2005 received corrosion control training equivalent to those listed in subparagraph 10.13.6.1a.

2. The training noted in subparagraphs 10.13.6.1a or 10.13.6.1b are prerequisite courses which must be satisfied prior to attending FRC Aircraft Corrosion Control course (Course N-701-0013) or Aircraft Corrosion course (Course C-600-3183).

10.13.6.2 O-level Work Center 12C or Corrosion Control Team personnel as well as the I-level Work Centers 51B, 60A, and 92D supervisors shall complete the Aircraft Corrosion Control course (Course N-701-0013) or Aircraft Corrosion course (Course C-600-3183) within 60 days of assignment.

NOTE: The corrosion training noted in subparagraph 10.13.6.2 is a prerequisite for Aircraft Paint/Finish Course (Course C-600-3182) or Aircraft Paint Touch Up and Markings Course (Course N-701-0014).

10.13.6.3 Personnel performing Aircraft and SE Painting operations (subparagraphs 10.13.4.1 and 10.13.4.2) shall complete the Aircraft Paint Touch Up and Markings course (Course N-701-0014) or Aircraft Paint/Finish course (Course C-600-3182) prior to painting aircraft/SE. This qualification is valid for an unlimited period.

NOTE: Activities may request on-site training for both Corrosion Control and Paint Final Finish from NATEC or FRC Mobile Training Teams via ACC/TYCOM. FRC Mobile Training Teams can provide Aircraft Corrosion Control course (Course N-701-0013)/Aircraft Paint Touch-up and Markings course (Course N-701-0014) training. NATEC can provide the Aircraft Corrosion Control course (Course N-701-0013) or Aircraft Corrosion course (Course C-600-3183)/Paint/Finish course (Course N-701-0014/C-600-3182) but must be granted written permission from the course manager from the respective course. FRC and NATEC representatives providing formal course support are required to be qualified instructors and subject matter experts. Setup, facilities, materials, publications, attendance and other considerations become the requesting unit's responsibility.

10.13.6.4 **R}** O-level QARs shall complete the Aircraft Corrosion Control course (Course N-701-0013) or Aircraft Corrosion course (Course C-600-3183) within 60 days of designation, if not previously completed. At a minimum, I-level AM (Navy) and Marine Corps structures mechanics (MOS 6062/6092) shall complete one or both of the above courses within 60 days of designation, if not previously completed.

10.13.6.5 Wing Material Condition Inspectors shall complete annual inspection OJT with FRC PMI representatives to include general inspection techniques, common discrepancy issues and current specific areas of interest being observed by the FRC/ISSC/TYCOM team.

10.13.6.6 Wing Material Condition Inspectors shall complete the Aircraft Corrosion Control course (Course N-701-0013) or Aircraft Corrosion course (Course C-600-3183) within 90 days of assignment.

NOTES: 1. Subparagraphs 10.13.6.4 through 10.13.6.6 (above) may be waived by the T/M/S Wing for operational commitments but must be satisfied within 90 days after completion of that operational commitment.

2. Course information for all NAVAIR and CENNAVAVNTECHTRA courses is available on CANTRAC at <https://cetarsweb.cnet.navy.mil>.

10.13.6.7 D-level artisans performing corrosion inspections, prevention, arrestment, and removal shall complete the following courses for qualification in corrosion control:

- a. FRC Corrosion Prevention and Control Training Course.
- b. FRC Aircraft Painting Course for Aircraft Painters.

NOTE: Maximum use of the FRC corrosion control training is recommended for all personnel involved in aircraft/equipment maintenance.

10.14 Plane Captain Qualification Program (NAMPSOP)

10.14.1 Introduction

10.14.1.1 The Plane Captain Qualification Program establishes policy, responsibilities, and requirements to delineate the procedures and guidelines for the qualification, designation, recertification, and suspension/revocation of plane captains.

10.14.1.2 References

- a. NAVAIR 00-80T-113, Aircraft Signals NATOPS Manual.
- b. NAVAIR 00-80T-105, CV NATOPS Manual.
- c. NAVAIR 00-80T-106, LHA/LHD/MCS NATOPS Manual.
- d. NAVAIR 00-80T-122, Helicopter Operating Procedures for Air-Capable Ships NATOPS Manual.

10.14.2 Discussion

10.14.2.1 The Plane Captain Qualification Program is applicable to all Navy and Marine Corps activities. Commercial and other government activities performing contract maintenance or support functions on naval aircraft shall, when possible, ensure contractor personnel in positions with no corresponding Navy rate meet the same or equivalent standards as Navy and Marine Corps personnel.

10.14.2.2 Modern naval aircraft are inherently complex. This complexity usually prohibits an individual from having sufficient technical knowledge of all systems; therefore, other technicians must perform those portions of the daily and turnaround inspections which are beyond the plane captain's technical qualifications. This assistance does not relieve plane captains of their overall responsibilities.

10.14.2.3 A comprehensive Plane Captain Qualification Program is essential to safe and efficient squadron flight operations. Due to the high degree of responsibility attached to this assignment, care must be exercised in selecting plane captain candidates to ensure they possess sufficient mechanical ability, aptitude, personal integrity, and motivation to accept this responsibility. A broad and comprehensive formal and OJT program is necessary to ensure only the most qualified individuals are designated as plane captains.

10.14.2.4 The designation of plane captains in no way nullifies the requirement for designating aircrewmembers under current NATOPS instructions. In commands where flight engineers or crew chiefs perform the functions of a plane captain, completion of the training curriculum and the designation as a flight engineer or crew chief by the CO shall qualify the aircrewman for plane captain duties. In such cases, the flight engineer or the crew chief training syllabus must include all plane captain qualifications/requirements. Flight engineers and crew chiefs, qualified as plane captains per this paragraph, are not required to take a separate plane captain examination or appear before the Plane Captain Selection Board. In those commands where the flight engineer or crew chief training syllabus does not include plane captain qualification requirements personnel shall qualify as plane captains per [paragraph 10.14.3.9](#).

10.14.2.5 All letters of designation, qualification, annual requalification certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.14.3 Responsibilities

10.14.3.1 Navy Wings/MAGs and FRCs shall:

a. Coordinate the development of a standard plane captain training syllabus, associated lesson guides, and practical and written examinations for the T/M/S aircraft for which they are responsible. PQS and MATMEPs, or FRC specific prerequisites (when available), shall be integrated into the training syllabus. The training syllabus shall cover all training and qualifications necessary to ensure plane captains are capable of performing the duties listed in [paragraph 10.14.3.9](#). The Plane Captain Training Syllabus Topics ([Figure 10.14-1](#)) provides guidance on the areas to be covered.

b. Coordinate the development of standard minimum requirements, including practical and written examinations, for plane captain designation recertification.

10.14.3.2 COs shall:

a. Establish indoctrination and training programs to ensure personnel designated as plane captains, crew chiefs, and flight engineers are fully qualified. A Plane Captain Selection and Examining Board, chaired by the MO/FRC Equivalent Officer and consisting of the Line/Power Line Division Officer, Squadron Safety Officer, Line/Power Line Division Supervisor, QAR/QAS, and others (as appropriate), shall be established by each activity. Upon initial qualification, and annually thereafter, each candidate shall receive a thorough written and practical examination. Annual requalification is required to verify standardization.

b. Designate, in writing, qualified plane captains using the Plane Captain Designation (OPNAV 4790/158) ([Figure 10.14-2](#)). The CO may (excluding detachments) delegate, in writing, the authority to sign Plane Captain Designations and recertifications to the MO. Squadrons with detachments are authorized deviations to allow the OINC to designate/recertify and suspend Plane Captain Designations. The CO of the parent squadron must specifically grant this authority, in writing, to each OINC. This authority may be granted only to detachments deploying in excess of 90 days. All procedures and requirements for designating a plane captain must be accomplished by the detachment.

c. Suspend or revoke designations of plane captains who display a disregard for safety or established aircraft maintenance/handling procedures. Designations shall only be reinstated after the individual has demonstrated the ability to properly perform the duties of a plane captain, completed plane captain refresher training syllabus, and appeared before the Plane Captain Selection and Examining Board.

10.14.3.3 The MO/FRC Equivalent Officer shall:

a. Designate, in writing via the MMP/SME listing, the Line/Power Line Division Officer or FRC level equivalent as the Plane Captain Qualification Program Manager/Coordinator.

b. Develop local command procedures (as required) per [Appendix D](#).

c. Chair the Plane Captain Selection and Examining Board to ensure all plane captains are fully qualified before recommending designation to the CO.

d. Recommend suspension/revocation of Plane Captain Designations to the CO.

10.14.3.4 The AMO and FRC training departments shall assist the Wing/MAG (as appropriate) in coordinating the development and maintenance of standardized plane captain training syllabus and recertification requirements, including written and practical examinations.

NOTE: D-level activities shall provide recommendations to Wing/MAG activities (as appropriate) when military personnel are under their cognizance.

10.14.3.5 The Program Manager/Coordinator shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be knowledgeable of NAVAIR 00-80T-113, NAVAIR 00-80T-105, NAVAIR 00-80T-106, NAV-AIR 00-80T-122, MIMs/MRCs (as appropriate), and this instruction.
- b. Conduct a formal training program as delineated by the training syllabus.
- c. Assign a highly experienced designated plane captain to each plane captain trainee. The designated plane captain shall serve as an instructor for the trainee, ensuring the trainee receives close supervision while performing assigned tasks. During the training cycle, trainees shall not be given full or final responsibility for inspection of the aircraft. This responsibility rests with the designated plane captain.
- d. Initiate the Plane Captain Designation (OPNAV 4790/158) (Figure 10.14-2) and request a Plane Captain Selection and Examining Board once the trainee has completed all training requirements, passed the written and practical examinations, and is deemed fully prepared and capable of assuming the responsibilities of a plane captain. Designation forms shall be completed when the individual is qualified. Documentation of the designation shall be entered on page 4 of the individual's Service Record (Section III of the US Marine Corps Enlisted Aviation Maintenance Personnel Training and Qualification Jacket). For each qualification, OPNAV 4790/158 shall be filed in the individual's qualification/certification record. Personnel currently qualified in the same T/M/S aircraft from a previous command shall, as a minimum, demonstrate proficiency by practical examination and successfully complete a Plane Captain Selection Board prior to designation by the new command.
- e. Ensure designated plane captains assigned away from plane captain duties over 90 days receive refresher training (Figure 10.14-3) and are interviewed by the Program Manager prior to assuming plane captain duties.
- f. Ensure an adequate number of personnel are assigned under instruction to compensate for plane captain attrition. The total number of plane captain trainees shall be as determined by the MO.
- g. Maintain a program file to include:
 - (1) Applicable POCs.
 - (2) Program related correspondence and message traffic.
 - (3) Applicable references or cross reference locator sheets.
 - (4) A copy of Letter of Delegation of Authority from the CO (if applicable) to sign Plane Captain Designations and recertifications.
- h. Use CSEC information and reports (provided by the program monitor) to aid in identifying specific areas of concern and to determine what steps are required for program/process improvements.
- i. Ensure the MMP lists all currently designated plane captains.

10.14.3.6 The QA Officer/SME listing shall designate, in writing via the MMP, a QAR/QAS as Plane Captain Qualification Program Monitor. This assignment does not preclude other QARs/QASs from monitoring this program, but places overall responsibility with one individual.

10.14.3.7 The Program Monitor shall:

- a. Perform audits using CSEC per paragraph 10.7.

b. Administer the written and practical application examinations for plane captain designations and recertifications (any QAR/QAS from the activity can administer the written portion of the examination). All plane captain trainees must obtain a minimum score of 90% on the plane captain examination.

c. Periodically monitor the Plane Captain Qualification Program and all plane captains (to include flight engineers/crew chiefs) to ensure:

(1) A comprehensive (formal and informal) training program encompassing all duties performed is used for qualifying plane captains, flight engineers, and crew chiefs that perform plane captain functions.

(2) An adequate number of personnel are assigned under instruction to compensate for plane captain attrition. The total number of plane captain trainees shall be as determined by the MO/Production Officer.

(3) Plane captains understand their responsibilities.

10.14.3.8 Work center supervisors shall ensure Plane Captain Qualification Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) or FRC level equivalent form and placed in the individual's qualification/certification record.

10.14.3.9 Plane captains shall:

a. Complete all plane captain training syllabus requirements, successfully pass the Plane Captain Selection and Examining Board, and be designated in writing on the Plane Captain Designation (OPNAV 4790/158) (Figure 10.14-2).

b. Be familiar with and demonstrate practical knowledge of the particular type of aircraft and its systems.

c. Perform daily inspections and turnaround inspections in conjunction with assisting others in performing O-level maintenance.

d. Assist pilots in flight preparation and be capable of advising them of the material condition of the aircraft.

e. Be responsible for the cleanliness and prevention of corrosion on the aircraft by pursuing an effective and continual preventive maintenance program.

f. Perform work required and assist on phase inspections, special inspections, and conditional inspections within rating specialty and as required by MRCs.

g. Be thoroughly familiar with and demonstrate knowledge of the aircraft cockpit, ejection seats, controls, systems, starting, and ground turnup procedures.

NOTE: Perform starting and ground turnup functions only when authorized in writing by higher authority.

h. Demonstrate knowledge of the ordnance and armament equipment installed in or on the aircraft to the extent necessary to ensure, during daily inspections and turnaround inspections, armament, ejection seat, and other CADs are in a safe and ready condition.

i. Be thoroughly familiar with fueling and defueling procedures; have a complete knowledge of applicable safety instructions and demonstrate the ability to understand and comply with them.

j. Show knowledge of the content and be able to use the technical publications necessary for proper servicing and maintenance of the aircraft. All personnel taking oil samples, servicing, and performing maintenance on engine/gearbox systems shall be fully aware of the importance of correctly documenting oil consumption and procedures to be followed when high oil consumption is suspected.

k. Know how and when to use the methods of aircraft security required for various weather conditions and shipboard operations and demonstrate such knowledge. Particular attention should be given to the security of control surfaces and the correct points for attaching aircraft tie-downs.

l. Demonstrate, in writing and by practical application, a complete knowledge of the procedures for riding brakes and any peculiarities of the braking system of the assigned aircraft.

m. Demonstrate, in writing and by practical application, a complete knowledge of the standard hand and wand signals, including those signals used for controlling aircraft ashore or afloat.

n. Closely supervise the training of assigned plane captain trainees.

NOTE: A designated plane captain, flight engineer, or crew chief qualified to perform plane captain functions will be present and supervise all launches and recoveries of aircraft.

o. Account for each tool prior to and after launch, recovery, and turn-up operation of assigned aircraft.

p. Conduct a FOD inspection of assigned aircraft ducts, engine cavities, and surrounding areas for prelaunch, postlaunch, and maintenance turns.

PLANE CAPTAIN TRAINING SYLLABUS TOPICS

1. Indoctrination interview
2. Required reading (applicable sections)
 - a. COMNAVAIRFORINST 4790.2A
 - b. NAVAIR 00-80T-105, CV NATOPS Manual
 - c. NAVAIR 00-80T-106, LHA/LHD NATOPS Manual
 - d. NAVAIR 00-80T-113, Aircraft Signals NATOPS Manual
 - e. NAVAIR 00-80T-122, Helicopter Operating Procedures for Air-Capable Ships NATOPS Manual
 - f. NAVAIR 01-1A-17 (Sections 2, 3, 4) Aviation Hydraulics Manual
 - g. NAVAIR 01-1A-509 (Series), Cleaning and Corrosion Control
 - h. NAVAIR 04-10-506, Aircraft Tire and Tubes
 - i. NAVAIR 17-1-125, Support Equipment Cleaning, Prevention and Corrosion Control
3. Safety Ashore and Afloat PQS
4. Flight Deck Familiarization
5. Egress/Explosive System Checkout Program
6. Flight Line Safety
7. Noise Hazards
8. Exhaust Blast Hazards
9. Propeller or Rotor Hazards
10. Tire and Wheel Maintenance Safety Program
11. General or Avionics Corrosion Control Course
12. FOD Prevention Program
13. Tool Control Program
14. Fuel Surveillance Program
15. Navy Oil Analysis Program
16. Oil Consumption Program
17. Hydraulic Contamination Control Program
18. Hazardous Material Control and Management Program
19. Technical Publications
20. 3M Documentation
21. Support Equipment Operator Training and Licensing Program
22. Fire Fighting Procedures and Responsibilities
23. Moving Aircraft
24. Towing Aircraft
25. Brake Riding
26. Cleaning Aircraft
27. Aircraft Preservation
28. Duct Diving
29. Aircraft Fastener Integrity Inspection
30. Daily and Turnaround Inspections
31. Special Inspections
32. Conditional Inspections
33. Fueling and Defueling
34. Nitrogen System Servicing
35. Hydraulic System Servicing
36. Engine/Transmission Oil System Servicing
37. Liquid Oxygen Converter Handling Safety
38. Aircraft Ordnance
39. CADs
40. T/M/S NATOPS Procedures
41. Hand Signals
42. Launch/Recovery Procedures
43. Hot Brake Procedures
44. Aircraft Alert Posture Procedures
45. Flight Controls
46. Cockpit Instrumentation
47. Support Equipment Misuse and Abuse
48. T/M/S Standard Emergency Procedures
49. T/M/S PQS (if applicable)

Figure 10.14-1: Plane Captain Training Syllabus Topics

PLANE CAPTAIN DESIGNATION			
PART I - REQUEST			
1. NAME-LAST, FIRST, MIDDLE INITIAL		2. RATE/GRADE	3. DEPARTMENT/DIVISION
4. AIRCRAFT TYPE/MODEL/SERIES	5. TYPE DESIGNATION <input type="checkbox"/> INITIAL DESIGNATION <input type="checkbox"/> REQUALIFICATION		
6a. DATE OF WRITTEN EXAM	6b. RESULTS	7a. DATE OF PRACTICAL EXAM	7b. RESULTS
PART II - CERTIFICATION			
I certify that I understand my responsibilities as set forth in the current OPNAV Instruction 4790.2.			
8a. SIGNATURE OF MEMBER			8b. DATE
9a. SIGNATURE OF OFFICIAL RECOMMENDING DESIGNATION			9b. DATE
PART III - SELECTION BOARD ACTION			
The member in Part I has completed satisfactorily all established indoctrination and training programs for the requested designation. He has appeared before the Plane Captain Selection and Examining Board and has been certified qualified for the requested designation. Approval of his designation is recommended.			
10a. SIGNATURE OF QUALITY ASSURANCE REPRESENTATIVE			10b. DATE
11a. SIGNATURE OF LINE DIVISION SUPERVISOR			11b. DATE
12a. SIGNATURE OF LINE DIVISION OFFICER			12b. DATE
13a. SIGNATURE OF SAFETY OFFICER			13b. DATE
14a. SIGNATURE OF MAINTENANCE OFFICER			14b. DATE
PART IV - APPROVING OFFICIAL ACTION			
The certification of members of the Plane Captain Selection and Examining Board of the completion of all requirements for the requested designation in Part I is this date approved. The Military Personnel Officer is requested to prepare an entry in the member's service record.			
15a. SIGNATURE OF COMMANDING OFFICER			15b. DATE
PART V - MILITARY PERSONNEL OFFICER ACTION			
It is certified that the approved designation has this date been entered in the service record.			
16a. SIGNATURE OF MILITARY PERSONNEL OFFICER			16b. DATE
ORIGINAL TO: Individual's Qualification/Certification Record			

Figure 10.14-2: Plane Captain Designation (OPNAV 4790/158)

PLANE CAPTAIN REFRESHER TRAINING SYLLABUS

Plane Captain Name: _____	Rate/Rank: _____	Date _____
---------------------------	------------------	------------

1. Egress/Explosive System Checkout	_____	_____
	AME Supervisor	Date
2. Review Danger Areas	_____	_____
	P/C Supervisor	Date
3. Review Brake Rider Qualifications	_____	_____
	P/C Supervisor	Date
4. Review Duct Diver Qualifications	_____	_____
	P/C Supervisor	Date
5. Review Emergency Procedures	_____	_____
	P/C Supervisor	Date
6. Review Lox Converter Qualifications	_____	_____
	P/C Supervisor	Date
7. Review Oil System Servicing Procedures	_____	_____
	P/C Supervisor	Date
8. Review Hydraulic System Servicing System	_____	_____
	P/C Supervisor	Date
9. Review Aircraft Refueling Procedures	_____	_____
	P/C Supervisor	Date
10. Perform Walkaround	_____	_____
	P/C Supervisor	Date
11. Launch Aircraft	_____	_____
	P/C Supervisor	Date
12. Recover Aircraft	_____	_____
	P/C Supervisor	Date
13. Quality Assurance Monitor	_____	_____
	P/C Supervisor	Date
14. Aircraft Ordnance	_____	_____
	P/C Supervisor	Date
15. Fuel Sampling Procedures	_____	_____
	P/C Supervisor	Date

_____ Plane Captain Branch Supervisor Signature Date	_____ Line/Power Line Division Officer Signature Date
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Figure 10.14-3: Plane Captain Refresher Training Syllabus

10.15 Egress/Explosive System Checkout Program (NAMPSOP)

10.15.1 Introduction

The Egress/Explosive System Checkout Program establishes policy, responsibilities, and requirements for egress system checkout procedures.

10.15.2 Discussion

10.15.2.1 Due to the inherent dangers associated with egress/explosive systems, a checkout program is required. Prior to coming in contact with or performing aircraft maintenance, all maintenance personnel assigned to activities operating aircraft with egress/explosive systems shall be indoctrinated on each T/M/S aircraft assigned. The indoctrination will address, but not be limited to, procedures to safely operate the aircraft canopy system, enter into the cockpit, and general rules while working in or around the ejection seat, canopy areas, or any explosive device(s) associated with ALSS. This shall include hazards and safety precautions associated with ejection seats, canopy jettison/fracturing systems, parachute deployment, fire extinguisher, Deployable Flight Incident Recorder System, Helicopter Emergency Floatation System, A} Dry Bay Fire Suppression System, and cable cutting systems. The requirements of the Egress/Explosive System Checkout Program are applicable to all Navy and Marine Corps activities performing on/off aircraft/equipment maintenance to include commercial and other government activities performing contract maintenance, production, or other support functions on naval aircraft.

NOTES: 1. Military/civilian personnel from another activity are not allowed entry into the cockpit area for any reason without prior approval from the CO or FRC Production Officer.

2. Some aircraft have ALSS configurations that are T/M/S unique. Therefore, only AME/PRs or MOS 628X/6048 personnel qualified for that specific T/M/S aircraft shall administer an egress/explosive system checkout for that T/M/S aircraft.

3. Activities consistently operating under the detachment/homeguard concept with no PR assigned to the detachment shall designate a qualified AE/AT/AO to perform Egress/Explosive System instruction and checkout. These individuals shall be required to have the T/M/S 83XX NEC and be ordnance certified.

10.15.2.2 The ISSC for CADs and PADs is COMMANDING OFFICER, NAVAL SURFACE WARFARE CENTER INDIAN HEAD DIVISION (Code 530 and 510 respectively), 101 STRAUSS AVE, INDIAN HEAD MD 20640-5035, DSN 354-2225/2101 or COMM (301) 744-2225/2101.

10.15.2.3 The ISSC for ejection seats is COMMANDING OFFICER, FRCNE, PSC BOX 8021, CHERRY POINT NC 28533-0021, DSN 451-8731 or COMM (252) 464-8731.

10.15.2.4 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.15.3 Responsibilities

10.15.3.1 The MO or FRC Production Officer shall:

a. Designate, in writing via the MMP, the Egress/Environmental Systems Shop (13B) or Aviators Equipment Shop (13A) Work Center Supervisor as the Egress/Explosive System Checkout Program Manager.

b. Develop local command procedures (as required) per [Appendix D](#).

c. Use Egress/Explosive System Checkout Instructor Designation ([Figure 10.15-1](#)) to designate AME/PR or MOS 628X/6048 personnel certified to perform egress/explosive system checkout training. FRC activities will ensure personnel certified to perform egress/explosive system checkout training are designated by the Production Officer.

NOTES: 1. A} Ejection Seat equipped T/M/S shall only designate a qualified and certified AME instructor as the Program Manager.

2. Marine Corps aviation units with attack helicopters are authorized to use qualified PR/MOS 6048 personnel to give egress/explosive system checkouts on attack helicopters only.

10.15.3.2 The Program Manager or FRC activity shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Recommend qualified AME/PR or MOS 628X/6048 personnel for designation as egress/explosive system checkout instructors for each specific T/M/S.

NOTE: Marine Corps aviation units with attack helicopters are authorized to use qualified PR/MOS 6048 personnel to give egress/explosive system checkouts on attack helicopters only.

b. Be knowledgeable of applicable T/M/S MIMs/MRCs and this instruction.

c. Ensure egress/explosive system training and checkout for all maintenance personnel upon reporting aboard and every 6 months thereafter. Any personnel removed from aircraft maintenance responsibilities for 90 days or longer will receive an egress/explosive system checkout before performing any aircraft maintenance.

NOTE: When available, ensure personnel use web-based training/IMI provided by the ISSC. CAD/PAD, Safety, and Process Training is available at <https://cadpad.ih.navy.mil>.

d. Maintain a MO or FRC Production Officer approved comprehensive guide/check sheet for use during egress/explosive system training and checkout (paragraph 10.15.3.1c above).

e. Maintain a program file to include:

- (1) Applicable POCs.
- (2) A master copy of the guide/check sheet used for training and checkout.
- (3) Program related correspondence and messages.
- (4) Applicable references or cross reference locator sheets.

f. Ensure only qualified, certified AME/PR or MOS 628X/6048 personnel administer egress/explosive system checkouts.

g. Monitor completion of egress/explosive system checkouts and inform work center supervisors if any personnel are overdue.

h. Use CSEC information and reports (provided by the Program Monitor) to aid in identifying specific areas of concern and to determine what steps are required for program/process improvement.

i. Submit a list of all personnel due requalification during the next month to the MMCO for publication in the MMP.

10.15.3.3 The QA Officer shall designate, in writing via the MMP, a qualified AME/PR or MOS 628X/6048, as applicable, QAR as the Egress/Explosive System Checkout Program Monitor. This assignment does not preclude other qualified QARs from monitoring this program, but simply places the overall responsibility with one individual.

10.15.3.4 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Assist in preparing **R** DRs.

10.15.3.5 The Aircraft Division Officer shall coordinate egress/explosive system safety indoctrination and training of all assigned aircrew.

10.15.3.6 Egress/Explosive System Checkout Instructors shall:

- a. Be T/M/S ordnance qualified, certified.
- b. Provide egress/explosive system training and checkout for personnel.
- c. Sign Egress/Explosive System Checkout Certification ([Figure 10.15-2](#)) for each additional re-certification.

10.15.3.7 Work center supervisors shall:

- a. Ensure Egress/Explosive System Checkout Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.
- b. Ensure all work center personnel receive an egress/explosive system safety checkout by a designated AME/PR or MOS 628X/6048 prior to being assigned to work on/around aircraft.
- c. Ensure all checkouts are documented on the Egress/Explosive System Checkout Certification ([Figure 10.15-2](#)) and maintained in the individual's qualification/certification record **A** and a copy placed in the program binder for non-ASM command.
- d. Coordinate with the Program Manager to ensure all personnel assigned have current egress/explosive system checkouts.

EGRESS/EXPLOSIVE SYSTEM CHECKOUT INSTRUCTOR DESIGNATION

1. I, _____, fully understand my responsibilities as an
(Name) (Rate/Rank)

Egress/Explosive Systems Checkout Instructor for _____ aircraft in _____
(T/M/S) Activity

Signature: _____

2. The above named individual has completed the following:

A. Required Reading:

	Signature	Date
Egress/Explosive System Checkout Program (NAMPSOP)	_____	_____
MIMs/MRCs	_____	_____

B. OJT performed under the direct supervision of the Program Manager.

	Signature	Date
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

3. Recommended. _____
13A/13B Work Center Supervisor Signature Date

4. Recommended. _____
Aircraft Division Officer Signature Date

5. Designated. _____
Maintenance Officer Signature Date

Figure 10.15-1: Egress/Explosive System Checkout Instructor Designation (Sample)

EGRESS/EXPLOSIVE SYSTEM CHECKOUT CERTIFICATION

Name (Last, First, MI) Rate/Rank Activity

1. I have read and understand the current Egress/Explosive System Checkout Program directives and received instructions to safely perform aircraft maintenance around a canopy, ejection seats, and cockpit areas.

Member's Signature Rate/Rank Date

2. The above named individual has received Egress/Explosive system Checkout per COMNAVAIR-FORINST 4790.2.

INSTRUCTOR SIGNATURE	DATE GIVEN	MONTH NEXT DUE

Figure 10.15-2: Egress/Explosive System Checkout Certification (Sample)

10.16 Support Equipment (SE) Operator Training and Licensing Program (NAMPSOP)

10.16.1 Introduction

10.16.1.1 The SE Operator Training and Licensing Program establishes policy, responsibilities, and requirements for SE training and licensing.

10.16.1.2 References:

- a. OPNAVINST 1540.2, Naval Aviation Maintenance Training (NAMTRA) Program Administration and Operation.
- b. NAVAIR 00-80T-96, Basic Handling & Safety Manual, US Navy Support Equipment Common.
- c. NAVSEA SW023-AH-WHM-010, Handling Ammunition and Explosives with Industrial Materials Handling Equipment.
- d. NAVAIR 00-80T-119, Weight Handling Support Equipment Manual.
- e. NAVSEA SW020-AF-HBK-010, Motor Vehicle Driver and Shipping Inspecting Manual for Ammunition, Explosives and Related Hazardous Material.
- f. OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions.

NOTE: Forklift trucks are MHE, not SE, therefore are not covered in this chapter. Refer to NAVSUP Publication 538 for MHE guidance and training requirements and NAVSEA SW023-AH-WHM-010 for explosive operator training requirements.

10.16.2 Discussion

10.16.2.1 Proper operation of SE is the key to safe, efficient aircraft and equipment maintenance. Improper use of SE has resulted in excessive ground handling mishaps, repair and replacement costs amounting to millions of dollars annually, and reduced operational readiness. All personnel operating SE must be fully knowledgeable of operational characteristics, safety precautions, and emergency procedures. Command attention in these matters will significantly reduce the potential for personal injury and equipment damage.

10.16.2.2 Specialized skills are required to maintain and operate present day weapon systems and associated equipment. Other available training programs are Navy training schools, initial training, rate training manuals, and in-service training. [Paragraph 10.1](#) and OPNAVINST 1540.2 contain information on these programs. These instructions do not, however, emphasize or define the SE aspect of aviation training, nor do they provide for licensing of personnel to operate such equipment.

NOTE: FRC activities may have additional training requirements identified in the organization's Training, Special Process Certification and Licensing Program.

10.16.2.3 The two-phase operator training program is designed to provide:

- a. Training in the operation and O-level maintenance of SE (Phase I).
- b. Training and qualification of O-level, I-level, and D-level personnel in the proper operation of SE for the particular aircraft/equipment maintenance functions for which they will use the SE (Phase II).

NOTE: [Paragraphs 10.16.4.6](#) and [10.16.4.7](#) provide specific requirements for Phase I and Phase II.

10.16.2.4 Phase I SE training is conducted at IMA/FRC activities, using training materials furnished/prepared by CENNAVAVNTECHTRA. Operating courses may be obtained by forwarding a letter containing an equipment list and course number to: COMMANDING OFFICER, CENTER FOR NAVAL AVIATION TECHNICAL TRAINING, NAS PENSACOLA FL 32508. Refer to NAVEDTRA 10500, Volume II, for course description and implementation date. All revisions are listed in the special information section.

10.16.2.5 A USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Figures 10.16-1 and 10.16-2) is required of all personnel who operate SE, regardless of rate, rating, civilian pay grade, or title. A valid U.S. Government Motor Vehicle Operator's Identification Card (OF-346) for motor vehicles or valid state operator's license is a prerequisite for issuing an SE license for self-propelled SE. Figure 10.16-3 is a master list of all SE requiring an operator's license. NATEC/COMNAVAIRSYSCOM engineering and OEM SME representatives providing initial training of new or newly modified SE do not require a USN Aviation Support Equipment Operator's License.

10.16.2.6 Training materials are produced and distributed by CENNAVAVNTECHTRA under the direction of and in cooperation with COMNAVAIRSYSCOM (PMA 205). Licensing requirements are effective 90 days following availability of a new course at an activity. SE operator courses contain course outlines, lesson guides, and training aids as appropriate. Training on equipment not included in the program due to limited use, nonavailability, or for other reasons dictated by unusual circumstances, will be conducted by NATEC/COMNAVAIRSYSCOM engineers, public works departments, or at IMAs/FRCs using locally prepared courses.

10.16.2.7 Navy Wing/MAG SE Training and Licensing Program managers coordinate development of Phase II SE training written exams covering equipment operating procedures, safety precautions, emergency procedures, and on-aircraft interface/operation. Specific Phase II SE training requirements for WHE are in NAVAIR 00-80T-119.

10.16.2.8 Recommendations concerning any aspect of SE training programs should be forwarded via the chain of command to CNO (N00T) with a copy to COMNAVAIRSYSCOM (PMA 205).

10.16.2.9 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.16.3 Responsibilities

10.16.3.1 The MO/FRC Equivalent Officer shall:

- a. Designate, in writing via the MMP/SME listing, the AMO (O-level)/SE Division Officer/QA Specialist (I-level/FRC) as the SE Operator Training and Licensing Program Manager/Coordinator.
- b. Develop local command procedures (as required) per [Appendix D](#).
- c. Sign USN Aviation Support Equipment Operator's License (OPNAV 4790/102) as licensing official for all command operators upon satisfactory completion of Phase I and Phase II SE training. For USN FRCs and overseas IMAs, this responsibility may be delegated in writing to the Assistant OINC/AMO or appropriate civilian official.
- d. Ensure all instances of SE misuse and abuse are thoroughly investigated and properly reported.
- e. Revoke an operator's license when the operator:
 - (1) Misuses or abuses SE.

- (2) Displays unsafe operator habits or behavioral traits.
- (3) Is involved in an accident or incident and the resulting investigation determines negligence.
- (4) Is cited for significant or recurring safety infractions.

(5) Loses on-base driving privileges or the U.S. Government Motor Vehicle Operator's Identification Card (OF-346) or state driver's license becomes invalid for any reason. (This applies to self-propelled equipment only.)

f. Suspend a license after an operator is involved in an accident/incident until an investigation is complete and responsibility determined. Reinstate a license if the operator is deemed "not at fault."

g. Ensure assigned SE is properly maintained and operated.

h. Provide Phase I SE training to all command and tenant activity personnel requiring licensing (IMA only).

NOTE: For explosive handling equipment forklifts, the Weapons Officer shall verify completion of training requirements of NAVSEA SW023-AH-WHM-010 (IMA and FRC activities only).

10.16.3.2 Program Manager/Coordinator

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. O-level shall:

- (1) Implement and manage the SE Training and Licensing Program.
- (2) List SE-licensed personnel in the MMP.
- (3) Assist the wing/group in developing standardized Phase II written examination requirements.

b. IMA and FRC activities shall:

- (1) Manage the SE Training and Licensing Program.
- (2) Establish a formal course of instruction on each end item of SE in the inventory and the List of Equipment Requiring an SE Operator's License (Figure 10.16-3).
- (3) Ensure Phase I instructors are trained and capable in the proper techniques on instruction. Instructors shall be designated in writing, be E-5 or above or civilian, and licensed on all SE for which designated to provide training.
- (4) Provide the best possible facilities for classroom and laboratory areas.
- (5) Provide Phase I SE training (paragraph 10.16.4.6), as requested by the SE Operator Training Request (Figure 10.16-4) or equivalent modified form, to all command and tenant activity personnel.
- (6) Forward completed SE License Certification (Figure 10.16-5) or equivalent modified form to each individual's assigned activity.
- (7) Publish schedule of Phase I SE training (minimum of 30 days in advance), identifying course, location, and time of instruction.

(8) Upon completion of Phase I SE training, sign and forward the Phase I Section of the SE License Certification (Figures 10.16-5 and 10.16-6) to the individual's permanent activity.

(9) Develop Phase I operator courses (as outlined in paragraph 10.16.4.6a using Figures 10.16-7 and 10.16-8) if not furnished or developed by CENNAVAVNTECHTRA. Phase I operator course requirements for WHE are in NAVAIR 00-80T-119, Appendix C.

(10) Develop Phase II written examinations with the cognizant Division Officer/Training Management Office. WHE Phase II requirements for WHE operators and personnel who operate WHE for maintenance purposes only are in NAVAIR 00-80T-119.

(11) Notify all user activities if a course update revision affects equipment operating procedures or requirements.

(12) Ensure all personnel TAD to the SE pool have completed Phase II requirements for each T/M/S aircraft supported.

(13) Ensure individuals receive Phase II SE training to qualify them to operate the SE described on the license for the T/M/S aircraft identified in the restrictions block and maintenance tasks they will perform with the SE.

10.16.3.3 The QA Officer shall designate, in writing via the MMP/SME listing, a QAR/QA Specialist as the SE Operator Training and Licensing Program Monitor. This assignment does not preclude other QARs/QA Specialists from monitoring this program but places the overall responsibility with one individual.

10.16.3.4 The Program Monitor shall:

- a. Perform audits using CSEC per paragraph 10.7.
- b. Periodically monitor work in process to ensure only properly licensed personnel operate SE. Monitors shall include review of the expiration date of the individual's state/government driver's license for personnel operating self-propelled SE.
- c. Ensure procedures for qualifying and certifying SE operators are followed.
- d. Maintain a current inventory of applicable publications for assigned SE.
- e. Administer Phase II SE training written examinations to trainees and maintain a log ensuring all test results are identified as initial or renewal testing.

10.16.3.5 Division officers/program coordinators shall:

- a. Review and forward SE Operating Training Requests (Figure 10.16-4) for class quotas to the supporting IMA/FRC activities.
- b. Review and endorse SE License Certification (Figures 10.16-5 and 10.16-6) and forward to the MO/Production Officer for signature (may be delegated to appropriate authority).
- c. Ensure individuals receive Phase II SE training to qualify them to operate the SE described on the license for the T/M/S aircraft identified in the restrictions block and maintenance tasks they will perform with the SE.

d. Provide a signed copy of current license with a specified period of authorized use (not to exceed 30 days) for SE issue and receipt until permanent license is issued when personnel surrender licenses for renewal or additional qualifications.

e. Provide proficiency verification per [paragraph 10.16.4](#) for new and temporarily assigned operators possessing valid licenses from a previous command.

f. Ensure assigned SE is properly maintained and operated.

g. Develop, in conjunction with the IMA/FRC SE Division Officer/Training Management Office, Phase II SE training requirements using [Figures 10.16-7](#) and [10.16-8](#) as minimum criteria, to include practical and written examination standards for SE used within the division. (For IMA/FRCs/Air Operations/Weapons Division Officers only).

10.16.3.6 Work center supervisors shall:

a. Ensure SE Operator Training and Licensing Program indoctrination and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.

b. Ensure an adequate number of personnel are trained and licensed for each type equipment required.

c. Ensure all personnel operating SE have valid licenses or are in Phase II SE training under direct supervision of licensed personnel.

d. Ensure the SE License Certification ([Figures 10.16-5](#) and [10.16-6](#)) Phase I and II SE training documentation is filed in the individual's qualification/certification record or U.S. Marine Corps Enlisted Aviation Maintenance Personnel Training/Qualification Jacket.

e. Stress to work center personnel the value and operational importance of SE and their responsibility to report incidents of SE misuse or abuse.

10.16.3.7 Licensed personnel shall:

a. Maintain qualifications as SE operators.

b. Operate SE in a safe and mature manner including:

(1) Performing preoperational inspections.

(2) Operating equipment within designed capacities and capabilities.

(3) Observing all equipment safety features and practices.

c. Report any changes in personal qualifications. Changes include revocation, suspension, or expiration of state or government motor vehicle operators licenses, and changes to physical qualifications, for example, loss of hearing or taking medications that impair motor skills or cause drowsiness.

d. Report any observed reckless operation or intentional misuse/abuse of SE to the Division Officer/QA Program Coordinator.

10.16.4 Training and Licensing Requirements

10.16.4.1 SE operator licenses are valid for type equipment and aircraft for 3 years, regardless of activity assigned. The MO/FRC Equivalent Officer of issuing activities may, as conditions warrant, require personnel to requalify sooner than 3 years. Transfer to an activity operating the same type/model but a different series merely requires verification of proficiency. If an activity elects to honor valid licenses issued by other activities for permanently assigned or TAD augment personnel, they shall have the operator complete the Phase II practical portion of the SE License Certification (Figure 10.16-6) prior to using SE.

10.16.4.2 Licenses shall be renewed only after passing the Phase II written and practical tests. Personnel who fail either the practical or written test during license renewal or verification of proficiency must repeat Phase I course of instruction and Phase II SE training for the equipment concerned. Personnel who fail either the practical or written test while in training for initial licensing must receive additional Phase II OJT before being retested.

10.16.4.3 An expired, revoked, or suspended state license or U.S. Government Motor Vehicle Operator's Identification Card (OF-346) will cancel authorization to operate self-propelled SE. Figures 10.16-9 and 10.16-10 outline state driver license extension policies.

10.16.4.4 If a USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Figures 10.16-1 and 10.16-2) is revoked for an item of SE, the individual must pass the written and practical tests required for a first time licensee to requalify on that item.

10.16.4.5 The USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Figures 10.16-1 and 10.16-2) shall only list equipment the individual has been trained and certified to operate.

10.16.4.5.1 Write all dates in alpha-numeric DAY/MONTH/YEAR format, for example, 10 JAN 05.

10.16.4.5.2 Block 3 (Date Expires). NA.

10.16.4.5.3 Block 4. If the license has self-propelled SE, list the individual's state or government driver's license number, state, and expiration date. If the state permits automatic extension, type "AUTO EXT" above the expiration date.

10.16.4.5.4 Block 7. MO/FRC Equivalent Officer signature (may be delegated to appropriate authority).

10.16.4.5.5 Block 8A. Entries must have specific equipment identification, for example, NC-2A and A/S32A-31A. Licenses containing general entries, for example, mobile electric power plants or powered bomb hoists, instead of specific entries, for example, NC-2C or HLU-196/E are not valid. Only one item of SE shall be listed per line unless items are model variations of the same type equipment and taught in the same course of instruction, for example, TA-75A/B/C tow tractors. Entries certifying engine test system operation shall contain the test system and type engine.

10.16.4.5.6 Block 8B. Expiration date for each specific type SE. Entries for self-propelled SE must not exceed the expiration date in block 4 (unless auto extend) or 3 years, whichever comes first. Expiration dates shall be based on the date of the Phase II written examination.

10.16.4.5.7 Block 8C. MO/FRC Equivalent Officer initials (may be delegated to appropriate authority).

10.16.4.5.8 Block 9. "Restrictions" on the back of the USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Figure 10.16-2) shall be annotated as follows:

a. To indicate the specific (T/M/S) aircraft the individual is certified to operate, O-level and FRC activities shall annotate block 9 "For (T/M/S) aircraft only" or "Restricted to Non-Aircraft Use."

b. Due to the various types of transient aircraft serviced by OMDs, SE licenses for transient line personnel may be annotated "Transient Aircraft Use" in block 9. "Transient Aircraft Use" is limited to launch, recovery, servicing, and handling operations. The transient aircrew shall provide assistance as required. Additionally, block 9 of licenses for transient line personnel shall list the T/M/S of any "Other Than Transient" aircraft for which the MO is certifying proficiency.

c. Personnel assigned to Air Departments aboard CV- and L-class ships shall be licensed under the same provisions as transient line personnel and shall be required to document Phase II SE training for only one T/M/S aircraft. Their licenses shall be annotated in block 9, "Flight/Hangar Deck Operations Only". Aircraft hookup shall be required to be performed by a licensed plane captain for the T/M/S aircraft under tow.

d. IMA/FRC personnel not operating equipment on aircraft shall have an entry "Restricted to Non-Aircraft Use" placed in block 9.

e. IMA/FRC personnel being licensed to operate self-propelled mobile cranes for maintenance purposes only shall have "For Maintenance Only" annotated in block 9.

10.16.4.6 Phase I SE training does not qualify the student for an SE license. Phase II SE training, on the specific T/M/S aircraft/maintenance tasks the individual will perform with the SE, is required before licensing and is the responsibility of the activity issuing the license.

NOTE: IMA/FRC Phase I instructors must be at least E-5 or above and licensed on all SE for which designated to provide training.

a. All SE with one or more of the following characteristics, and for which there is no CENNAVAVN-TECHTRA, NATEC, or FRC course, shall be evaluated by the supporting activity's MO/Production Officer to determine whether to establish formal operator training and licensing. All locally developed operator training courses shall be based on the outline in [Figures 10.16-7](#) and [10.16-8](#). These courses shall be forwarded to COMNAVAIRSYSCOM (PMA 205) via the ACC/TYCOM for determination of need to update the master list of SE requiring licensing and establishment of a CENNAVAVNTECHTRA developed instructors guide.

(1) Internal combustion engine (gasoline, diesel, or gas turbine).

(2) Input/output voltages greater than 115 volts alternating current.

(3) Input/output voltages greater than 28 volts direct current.

(4) Input/output pressures greater than 100 pounds per PSIG.

(5) Output temperatures greater than 150 degrees Fahrenheit.

(6) Manually operated SE that is highly hazardous in its operation and requires a specific, critical sequence of events to prevent injury or aircraft/equipment damage.

b. If an equipment change or a course update/revision affects equipment operation procedures or requirements, the activity providing Phase I SE training shall notify supported activities.

c. Activities providing Phase I SE training shall document training in the Phase I Section of the SE License Certification ([Figure 10.16-5](#)).

10.16.4.7 Phase II SE training consists of required reading, OJT, and practical and written tests. These requirements ensure individuals become qualified to operate SE on specific T/M/S aircraft or maintenance tasks. This training must be accomplished prior to certification for T/M/S aircraft handling, servicing, or testing operations. Phase II SE training is required before licensing, and is the responsibility of the activity issuing the license. Phase II training can be provided by NATEC/COMNAVAIRSYSCOM engineers, and OEM SME representatives to license personnel in the use of new SE. These SMEs shall issue a certificate of training to formally document the type of training provided. The certificate of training shall be retained in the trainees training records as a permanent record and proof of certification after it has been routed to the certifying official for the issuance of the license. A practical and written test for the initial stand-up training qualifier is not required. However, once a qualifier has been established; the QA test and operators course shall be available for follow on training.

10.16.4.7.1 SE training in the proper operation and O-level maintenance of end items is part of Phase II of the AMT training track (where required), while licensing is a squadron/activity responsibility. SE training will only be conducted by the CENNAVAVNTECHTRA/CNATTMARU when the successful completion of PJT is entirely dependent on all students operating the end item of the SE on the aircraft. The hook up of hoses/cables on the aircraft from the end item of SE is not considered to be operating the SE, therefore, requires no formal SE training. The instructor will normally operate the end item of SE while the students are performing PJT. OPNAV (N17) approval is required to perform SE training at the CENNAVAVNTECHTRA/CNATTMARU. Where SE training is conducted in the AMT training track, the CENNAVAVNTECHTRA/CNATTMARU will prepare a completion certificate for each student and forward the certificate to the student's permanent activity.

10.16.4.7.2 Phase II SE training is required for each item of SE for which the individual is licensed. For model variations of the same type equipment and taught in the same course of instruction, for example, TA-75A/B/C tow tractors, Phase II SE training on one model is sufficient to license an individual on all models. Training, examination, and certification shall be documented on the Phase II Section of the SE License Certification ([Figures 10.16-5](#) and [10.16-6](#)).

NOTE: Wings shall develop standardized WHE Phase II SE training and documentation procedures for the T/M/S aircraft they support per NAVAIR 00-80T-119. IMAs shall develop the training and documentation procedures for the WHE they maintain per NAVAIR 00-80T-119.

10.16.4.7.3 OJT and practical training require use of a training syllabus based on [Figures 10.16-5](#) and [10.16-6](#) and NAVAIR 00-80T-119.

10.16.4.7.4 QA shall administer written Phase II examinations. A passing grade of 85 percent is required. A licensed operator shall administer the practical examination.

10.16.4.7.5 Foreign armed forces military personnel operating SE in support of foreign armed forces aircraft detachments shall meet minimum proficiency requirements as defined by the host IMA/FRC having reporting responsibility for the SE to be operated. At the discretion of the host IMA/FRC, this may encompass the entire Phase I/Phase II qualification process. At a minimum, safety parameters/procedures and qualification in the principles of equipment operation for each item shall be satisfactorily demonstrated to qualified host IMA/FRC personnel prior to independent use of SE by visiting foreign militaries. In cases where the foreign military operates a T/M/S not commonly supported by the host station, the proficiency demonstration shall specifically include the hosting activity with IMA/FRC observation of on-aircraft use for each piece of SE to ensure compliance with basic safety requirements. The OINC, Production Officer, or FRC Equivalent Officer of the host IMA/FRC must expressly designate by equipment type those individuals approved under the provisions of this paragraph.

10.16.4.8 Engine test system operators are certified to operate a particular test system and type engine. Training, certification, and recertification requirements for GTETS operators are specified in [paragraph 10.23](#).

10.16.4.9 For hand signals, refer to NAVAIR 00-80T-96, NAVAIR 00-80T-119, and OPNAVINST 3710.7 (as applicable).

10.16.4.10 PPE training shall be included in all operator training courses, and specifically in all WHE courses.

USN AVIATION SUPPORT EQUIPMENT OPERATOR'S LICENSE		
1. NAME OF OPERATOR	2. RATE	3. DATE EXPIRES
4. U.S. GOVERNMENT/STATE MOTOR VEHICLE OPERATOR'S LICENSE		
CARD NO.		ACTIVITY/STATE
LICENSEE IS QUALIFIED TO OPERATE AVIATION SUPPORT EQUIPMENT SPECIFIED ON THIS CARD SUBJECT TO STATED RESTRICTIONS.		
5. NAME AND LOCATION OF ISSUING ACTIVITY		
NOT TRANSFERABLE Card must be carried at all times when operating aviation support equipment.	6. SIGNATURE OF LICENSEE (Not Valid Unless Signed)	
	7. ISSUED BY (Signature and Title)	
OPNAV 4790/102 (REV. 1/92)		S/N 0107-LF-012-9600
8A. TYPE EQUIPMENT(S) FOR WHICH QUALIFIED	B. EXPIRATION DATE	C. CERTIFIED BY (Initials)

Figure 10.16-1: USN Aviation Support Equipment Operator's License (OPNAV 4790/102) (Front)

List of Equipment Requiring an SE Operator's License

EQUIPMENT

ACU-20/M AIR COMPRESSOR UNIT
A/M26M-3 LOX PURGE UNIT
A/M26U-14 OXYGEN SERVICING COMPRESSED GAS TRAILER
A/M26U-4B NITROGEN SERVICING TRAILER
A/M27T-3 HYDRAULIC POWER SUPPLY
A/M27T-5 HYDRAULIC POWER SUPPLY
A/M27T-6 HYDRAULIC TEST STAND
A/M27T-7 HYDRAULIC POWER SUPPLY
A/M27T-14 ELECTRIC HYDRAULIC POWER SUPPLY (EHPS)
A/M27T-15 DIESEL HYDRAULIC POWER SUPPLY (DHPS)
A/M32-A-108 SHORE MEPP
A/M32C-17 AIR CONDITIONER
A/M32C-21 AIR CONDITIONER
A/M32M-18A TRAILER MOUNTED CC CART
A/M32M-24 2000 LBS HANGAR DECK CRANE
A/M37M-2 FLUID PURIFIER
A/M42M LIGHT CART
A/M47A-1 TRACTOR MOUNTED ENCLOSURE
A/M48A-5 STEAM CLEANER
A/M48M-4 PRESSURE WASHER
A/S32A-30A TOW TRACTOR
A/S32A-31A TOW TRACTOR (CILOP)
A/S32A-32 SPOTTING DOLLY
A/S32A-35 CARRIER CRASH CRANE (CVCC)
A/S32A-36 AMPHIB CRASH CRANE (AACC)
A/S32A-37 TOW TRACTOR
A/S32A-42 TOW TRACTOR
A/S32A-44 1500 LBS A/C UTILITY CRANE
A/S32A-45 MID RANGE TOW TRACTOR
A/S32K-1E WEAPONS LOADER
A/S32M-14 AIRCRAFT MAINTENANCE CRANE

EQUIPMENT

A/S32M-17 AIRCRAFT MAINTENANCE CRANE
A/S32P-16A FIRE TRUCK
A/S32P-25 FIRE TRUCK
A/S37A-3 SHIPBOARD MEPP
A/S47A-4 JET AIRCRAFT START UNIT
A/S48M-2 MAINTENANCE PLATFORM (DIESEL)
A/S48M-3 MAINTENANCE PLATFORM (ELECTRIC)
A/U26U-1 OXYGEN SERVICING TRAILER
A/U47A-5 MSU-200NAV AIR START UNIT
AWG-9 COOLANT CART
BT-400-46 PRE-HEATER
COMMON SHIPBOARD FORKLIFTS
DA-675/MSM DUMMY LOAD BANK
GTCP 100-82 GAS TURBINE
HALON 1211 RECYCLE/RECOVERY UNIT
HLU-196B/E HOIST LOADING UNIT
HLU-196D/E BOMB HOISTING UNIT
JG-75 TOW TRACT
MEP-006A GENERATOR SET
MEP-009A GENERATOR SET
MEP-105A GENERATOR SET
MEP-807A/MEP-809A TACTICAL QUIET GENERATOR
MMG-1A MOBILE ELECTRIC POWER PLANT
MSU 200NAV MOBILE START UNIT (GAS TURBINE)
NITROGEN CARTS/SERVICING BOTTLES
NC-10A/B MOBILE ELECTRIC POWER PLANT
ST-1000 REFRIGERANT RECOVERY/RECYCLE UNIT
TA-75A/B/C TOW TRACTOR
TMU-27 LIQUID OXYGEN CART
TMU-70/M LIQUID OXYGEN CART
550 DN SCRUBBER
65A102-J1 CORROSION CONTROL UNIT

Courses for the SE listed above are stocked by CENNAVAVNTECHTRA. To request a special/replacement course, forward the request to: COMMANDING OFFICER, NAVAL AIR MAINTENANCE TRAINING GROUP, 115 CUNNINGHAM ST, STE C, BLDG 0-781, PENSACOLA FL 32508-5003. Refer to the Catalog of Naval Training Courses (CANTRAC) NAVEDTRA 10500, Volume II for course number, description, and implementation date.

Operator training courses have not been developed by CENNAVAVNTECHTRA for the following equipment. Training on this equipment may be obtained from NATEC, Public Works, or at the IMA using locally prepared courses (as appropriate).

MHAC-2AC-302-8 LIQUID COOLANT FILTERING UNIT
HM-GT1-C HYDROMITE (DIESEL/ELECTRIC)

NOTE: Operation of like SE installed in Naval aircraft does not require SE licensing and shall be operated per aircraft publications.

Figure 10.16-3: List of Equipment Requiring an SE Operator's License

From: _____
Division Officer

To: SE Licensing Support Activity

Via: Assistant Maintenance Officer

Subj: SE OPERATOR TRAINING REQUEST

1. Request operating training for _____ On the following SE:
Last Name, First, MI Rate/Rank

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

(Single line item of SE per line, maximum of 5 lines)

2. The individual has been screened, physicals conducted and is considered a suitable nominee.

3. Date of Physical Examination (if applicable): _____

4. This training is for:

- a. Initial qualification _____
- b. Requalification _____

5. Currently Possesses:

- a. A USN Aviation Support Equipment Operator's License (OPNAV 4790/102)
Yes _____ No _____
- b. A US Government Motor Vehicle Operator's Identification Card (OF-346)
Yes _____ No _____

6. State Drivers License Information (Figures 10.16-9 and 10.16-10)

- a. License number _____
- b. State _____
- c. Expiration date _____
- d. Auto Extension Yes _____ No _____
- e. Restrictions _____

Division Officer Signature

Date

Figure 10.16-4: SE Operator Training Request (Sample)

SE LICENSE CERTIFICATION

Last Name	First	MI	Rate/Rank	SSN	Activity	T/M/S Aircraft
-----------	-------	----	-----------	-----	----------	----------------

State Driver's License				U.S. Government Motor Vehicle Operator's License	
State	License No.	Expiration Date	Auto Extend <input type="checkbox"/> Yes <input type="checkbox"/> No	License No.	Expiration Date

PHASE I SECTION

Training Activity		
Support Equipment	Course Number	Date Completed
Self Propelled Vehicle <input type="checkbox"/> Yes <input type="checkbox"/> No	Flight Line Training Date	Weight Handling Equipment Physical
SE DIVISION OFFICER		DATE:

PHASE II SECTION

- ☐ NEW (Parts A, B, C, D, and E required)
☐ RENEWAL (Parts C, D and E required)
☐ PROFICIENCY (Parts C and E required)

PART A. REQUIRED READING	Trainee Signature	Date Read
A. COMNAVAIRFORINST 4790.2A, Chapter 10, paragraph 10.16		
B. NAVAIR 00-80T-96, Chapter____, Page____		
C. NAVAIR 00-80T-105 "Aircraft Emergency Procedures", Chapter____, Page____		
D.		
E.		

PART B. ON THE JOB TRAINING	Instructor's Signature	Date	Instructor's Signature	Date	Instructor's Signature	Date
1. Discuss ramp/flight line/hangar deck procedures.						
2. Discuss safety precautions.						
3. Discuss emergency procedures (Fuel spill, A/C or SE fire, etc.).						
4. Discuss personnel requirements and positioning.						
5. Discuss hand signals and other communication devices.						
6. Perform and document pre-operational inspection.						
7. Perform proper driving/towing procedures.						
8. Properly position and hookup SE.						
9. Perform maintenance/servicing tasks with the SE.						
10. Perform normal shutdown/disconnect procedures.						
11. Perform postoperational inspection.						

Figure 10.16-5: SE License Certification (Sample)

PART C. PRACTICAL EXAMINATION	SAT/ UNSAT	Examiner's Signature/Date:
1. Discuss ramp/flight line hangar deck procedures.		Remarks:
2. Discuss safety precautions		
3. Discuss emergency procedures (fuel spill, A/C or SE, fire, etc.).		
4. Discuss personnel requirements and positioning.		
5. Discuss hand signals and other communication devices.		
6. Perform and document preoperational inspection.		
7. Perform proper driving/towing procedures.		
8. Properly position and hookup SE.		
9. Perform maintenance/servicing tasks with the SE.		
10. Perform normal shutdown/disconnect procedures.		
11. Perform postoperational inspection.		

PART D. QUALITY ASSURANCE WRITTEN EXAMINATION			
QAR Examiner	Signature	Exam Score:	Date
		(Min. Passing Score 85%)	

PART E. CERTIFICATION					
Work Center Supervisor	Signature	Recommended		Yes	No
Division Officer	Signature	Recommended		Yes	No
Support Equipment Officer (IMA only)	Signature	Recommended		Yes	No
AMO (OMA only)	Signature	Recommended		Yes	No
MO	Signature	Recommended		Yes	No

Figure 10.16-6: SE License Certification (Sample) (continued)

PHASE I OPERATOR TRAINING OUTLINE

Lesson Topic 1.1.1: Equipment Familiarization

1. Purpose of Equipment
2. General Description of Equipment
3. Major Components/Assemblies/Systems
4. Controls
 - a. Function/Purpose/Use (normal/abnormal readings/positions of indicators/switches)
 - b. Description/Location
5. Emergency/Special Situations (if applicable)

Lesson Topic 1.1.2: Theoretical Application

1. Preoperational Inspections
 - a. Purpose.
 - b. Description (When, Who, How, and What).
 - c. Types (Static Inspection and Functional Check).
 - d. Documentation.
 - (1) Purpose.
 - (2) Procedure (Correct form(s) and annotations).
2. Servicing Requirements
3. Shutdown Procedures
4. Safety Requirements (Identify "Warning", "Cautions" and "General Safety" to follow when operating SE)
5. Written Examination (a minimum passing score of 85 percent is required)

Lesson Topic 1.1.3: Practical Application

NOTE: The instructor shall explain and demonstrate each of the following procedures then allow students to perform items #1 and #3a using a job sheet. Item #2 may be simulated if servicing is unnecessary at time of instruction.

1. Preoperational Inspection: Step by step procedures.
 - a. Static.
 - b. Functional.
 - c. Documentation.
2. Servicing: Step by step procedures, including:
 - a. Materials/fluids to use.
 - b. Servicing points.
 - c. Reading/interpreting level indicators.
 - d. Proper servicing practices.

Figure 10.16-7: Phase I Operator Training Outline

PHASE I OPERATOR TRAINING OUTLINE (continued)

Lesson Topic 1.1.3: Practical Application (continued)

3. Equipment Operation: Step by step procedures, including:
 - a. Normal Operation (In all modes).
 - (1) Start-up procedures (Starter duty cycle, position of critical controls).
 - (2) Indicator readings/control adjustment.
 - (3) Driving/maneuvering self-propelled equipment on approved terrains.
 - b. Emergency/Special procedures (as applicable).
 - (1) Situations that could happen to equipment involved which could cause personnel injury or equipment damage (Engine over speed/will not shutdown, electrical or fuel fires, brake failure, etc).
 - (2) Actions to be taken by the operator should these situations occur.
 - c. Towing.
 - (1) Peculiar requirements (Can the SE be towed/backed).
 - (2) Approved towing vehicles (Maximum speed/distance).
4. Shutdown Procedures:
 - a. Park/stow in designated area.
 - b. Check for leaks.
 - c. Determine if servicing is needed.
 - d. Note any discrepancies that occurred during equipment operation. Report discrepancies to supervisor and document on appropriate forms (as applicable).
 - e. Secure equipment.
 - (1) Parking brake set.
 - (2) Chock/tie down in place.
 - (3) Panels/doors/switches/controls properly secured or positioned.
 - (4) Equipment properly covered or protected.
 - f. Practical examination.

Figure 10.16-8: Phase I Operator Training Outline (continued)

STATE DRIVER LICENSE EXTENSION POLICIES

Each state legislates the licensing requirements for its residents. Policies and procedures for military extensions apply only to state residents who are out of their state while on active duty. For states where automatic extensions are allowed, two qualifying rules apply: the license has to be current at the time of entering the service and proof of active duty must be carried with the license.

1. The following have no military extension or automatic extensions:

- | | | | |
|-------------------------|-------------|-------------------|-------------------|
| a. Alabama | f. Guam | k. Nevada | p. Oregon |
| b. Connecticut | g. Hawaii | l. New Hampshire | q. Puerto Rico |
| c. Delaware | h. Kansas | m. New Jersey | r. South Carolina |
| d. District of Columbia | i. Kentucky | n. New Mexico | |
| e. Georgia | j. Missouri | o. North Carolina | |

2. States with automatic extensions include:

- a. Alaska: Valid for 90 days after discharge or return to state, whichever occurs first.
- b. Arizona: Valid for six months after discharge with notification of active duty status to Motor Vehicle Division.
- c. California: Valid for 30 days after honorable discharge or return to state, whichever comes first. Form DL 236 available to military, but not required.
- d. Florida: Valid for 90 days after discharge or return to state to live, whichever occurs first.
- e. Illinois: Valid for 45 days after discharge or return to state with notification of active duty status to Department of Motor Vehicles.
- f. Indiana: Valid for 90 days after discharge for military personnel stationed outside the state.
- g. Iowa: Valid for six months after discharge.
- h. Louisiana: Valid for 60 days after discharge for military personnel stationed outside the state.
- i. Maryland: Valid for 30 days after discharge or return to state, whichever occurs first.
- j. Massachusetts: Valid for 60 days after honorable discharge.
- k. Michigan: Valid for 30 days after discharge, but only during member's first return to the state while on leave following driver's license expiration.
- l. Minnesota: Valid for 90 days after discharge.
- m. Mississippi: Valid for 90 days after discharge or return to state, whichever occurs first.
- n. Montana: Valid for 30 days after honorable discharge.
- o. New York: Valid six months after discharge.
- p. North Dakota: Valid 30 days after discharge for military personnel stationed outside the state.

Figure 10.16-9: State Driver License Extension Policies

STATE DRIVER LICENSE EXTENSION POLICIES (continued)

- q. Ohio: Valid for six months after discharge.
 - r. Pennsylvania: Valid 45 days after discharge or return to state, whichever occurs first.
 - s. South Dakota: Valid for 30 days after honorable discharge or return to state, whichever occurs first.
 - t. Tennessee: Valid for 60 days after honorable discharge or return to state, whichever occurs first.
 - u. Texas: Valid only while absent from state during active duty and for 90 days after honorable discharge.
 - v. Utah: Valid for 90 days after discharge for military personnel stationed outside the state.
 - w. Washington: Valid for 90 days after honorable discharge.
 - x. West Virginia: Valid six months after honorable discharge.
 - y. Wisconsin: Valid for 90 days after discharge or 30 days after return to state, whichever occurs first.
3. States with special requirements/circumstances include:
- a. Arkansas: No automatic extension. Military personnel may apply for extension. Form attaches to the expired license, valid for 30 days after first tour or discharge, whichever occurs first. Extension not to exceed six years beyond original expiration date.
 - b. Colorado: Valid for three years beyond original expiration date or 90 days after return to the state, whichever occurs first. Form DR2639 available to military, but not required.
 - c. Idaho: No automatic extension. Military personnel may apply for extension valid for 60 days after discharge, not to exceed four years beyond original expiration date.
 - d. Maine: No automatic extension. Military personnel may apply for extension valid for 30 days after discharge. Licenses with an approved extension will display the letter "K" in the endorsement or permission box.
 - e. Nebraska: No automatic extension. May apply for extension valid for 60 days after discharge for military personnel stationed outside the state. Form DMV 07-08 must be carried with license.
 - f. Oklahoma: If on active duty outside continental limits, license is automatically extended for duration of service and for 60 days after return to the continental U. S.
 - g. Rhode Island: No automatic extension. Military personnel may apply for a "special operator's license" valid until 30 days after discharge.
 - h. Vermont: Valid for 30 days after discharge, not to exceed four years beyond original expiration date.
 - i. Virginia: Valid for six months after discharge for military personnel stationed outside the state, not to exceed five years beyond original expiration date.
 - j. Wyoming: No automatic extension. Military personnel may apply for a four-year extension.

Figure 10.16-10: State Driver License Extension Policies (continued)

10.17 Support Equipment (SE) Planned Maintenance System (PMS) Program (NAMPSOP)

10.17.1 Introduction

10.17.1.1 The Support Equipment Planned Maintenance System Program establishes policy, responsibilities, and requirements for planned maintenance of SE/AWSE.

10.17.1.2 References:

- a. NAVAIR 17-1-125, Support Equipment Cleaning, Prevention and Corrosion Control.
- b. NAVAIR 00-500A, Equipment Applicability List.
- c. NAVSUP Publication 2003, Unabridged Navy Index of Publications, Forms, and Directives.
- d. NAVAIR 17-1-114, Inspection and Proof Load Testing of Lifting Slings for Aircraft and Related Components.
- e. OPNAVINST 4790.4, Ships' Maintenance and Material Management (3-M) Manual.
- f. NAVAIR 01-1A-17, Aviation Hydraulics Manual.
- g. NAVAIR 01-1A-20, Aviation Hose and Tube Manual.
- h. NAVAIR 17-1-537, Aircraft Restraining Devices and Related Components.
- i. NAVAIR 00-80T-96, Basic Handling & Safety Manual, US Navy Support Equipment Common.
- j. NALDA TDSA NAT02, Support Equipment TD Listing.
- k. OPNAVINST 8000.16, The Naval Ordnance Maintenance Management Program (NOMMP).
- l. NAVAIR 00-500C, Directives Application List.
- m. NAVAIR 00-25-100, Naval Air Systems Command Technical Manual Program.
- n. OPNAVINST 3710.7, NATOPS General Flight and Operating Instructions.

10.17.2 Discussion

10.17.2.1 SE includes all equipment used to make an aeronautical system or end item operational in its intended environment. Both IMRL and non-IMRL SE shall be maintained and documented under the aviation 3M System or other COMNAVAIRSYSCOM approved system.

10.17.2.2 Required SE maintenance varies from basic cleaning, preservation, and corrosion treatment to complex and detailed maintenance inspections, servicing, preservation, and storage. The following elements of PMS are designed to ensure safety, proper operation, extended material life, and maximum equipment availability:

- a. Acceptance inspections are required upon receipt of each item of SE/AWSE. The Support Equipment Acceptance/Transfer Inspection Checklist ([Figures 10.17-1](#) and [10.17-2](#)) shall be used for tracking acceptance inspections. COMFRC activities develop similar procedures and forms for accomplishing and tracking acceptance inspections. If records are not received with SE, contact the previous

reporting custodian and SECA. When records cannot be obtained, perform all PM inspections specified in the applicable MRCs.

NOTE: Upon receipt of newly manufactured SE/AWSE that has never been placed into service, the PM cycle shall be established from the completion of acceptance inspection date. PMs are not required until the prescribed intervals have been reached as specified by applicable MRCs.

b. Periodic inspections are performed by squadrons, supporting IMAs, or FRCs to thoroughly examine the equipment in static and functional states. Inspection periods are established in increments of days, weeks, operating hours, and starts, depending on which variable most affects equipment performance.

NOTE: FRC activities may have additional training requirements identified in the organization's Training, Special Process Certification and Licensing Program.

c. Preoperational inspections shall be conducted on SE/AWSE prior to the first anticipated use each day and prior to each use as specified in applicable MRCs. Inspections include visual and functional verification that a unit is properly serviced and ready for use.

d. SE/AWSE shall be inducted into the IMA when calibration is required. FRCs shall coordinate induction of SE/AWSE calibration workload with supporting calibration activity.

e. Transfer inspections shall be performed on SE/AWSE prior to transfer to another activity. The Support Equipment Acceptance/Transfer Inspection Checklist (Figures 10.17-1 and 10.17-2) shall be used for tracking transfer inspections. FRCs shall develop similar procedures and forms for accomplishing and tracking transfer inspections.

f. Cleaning/corrosion control/preservation shall be per MRCs. All SE/AWSE that will not be used for extended periods shall be preserved per NAVAIR 17-1-125 and this instruction to maintain material condition.

10.17.2.3 Scheduled PM is required for equipment that meets one or more of the following conditions:

a. Periodic inspections/preoperational inspections are prescribed by COMNAVAIRSYSCOM MRCs identified in NAVAIR 00-500A, NAVSUP Publication 2003, MIMs, or COMNAVSEASYSYSCOM and manufacturers' publications.

b. Personnel injury or equipment damage may occur if the item fails during use. This includes common aeronautical equipment whose operation involves hazards, such as moving parts, hazardous chemicals, or discharge of material/extreme heat/cold/electrical shock.

c. The item requires NDI or load testing per NAVAIR 17-1-114.

d. Normal use involves rough handling or exposure to extreme environmental conditions, such as high humidity, heat, cold, or wind. These factors have historically degraded equipment condition beyond acceptable levels. The MO or MMCO/Production Control Officer shall determine which items fall into this category.

e. Items previously maintained under the surface 3M System, detailed in OPNAVINST 4790.4, shall have all maintenance performed and documented under aviation 3M per this instruction. Paragraph 10.17.7 provides guidance on transitioning items from surface to aviation methods.

NOTE: SE not meeting the above criteria for scheduled PM shall still be visually inspected for corrosion/serviceability before being used. Some items may only require basic corrosion prevention, cleaning, or preservation to maintain material condition. These are typically used as

part of, or in conjunction with, a larger major assembly and do not have movable or detachable parts. Although scheduled PM may not be required, division officers and work center supervisors shall remain responsible for material condition of all SE under their control.

10.17.2.4 SE PMS publications provide a basis for planning, scheduling, and performing periodic and preoperational inspection requirements. One or more of the following is for every maintenance task:

a. COMNAVAIRSYSCOM approved MRCs provide a basis for planning, scheduling, and performing scheduled maintenance requirements. The requirements are scheduled with intervals, such as calendar time or operating hours. MRC publications take precedence in conflicts with other directives.

b. COMNAVSEASYSYSCOM approved MRCs apply to SE that is common to both surface and aviation activities. Although in a different format than COMNAVAIRSYSCOM MRCs, they provide similar scheduling, material, and maintenance task information and shall be incorporated into the SE PMS Program.

c. Many MIMs specify requirements for periodic inspections or preoperational inspections and give detailed procedures for accomplishment. When a COMNAVAIRSYSCOM MRC has not been established, inspection scheduling, material requirements, and maintenance accomplishment will be performed per the MIMs.

d. Manufacturers' publications may be used in lieu of local MRCs if they are the only publications available and give detailed procedures and specific intervals for periodic inspections or preoperational inspections.

10.17.2.5 SESS is designed for the management of SE. This system provides automated methods of PM scheduling for SE, TD compliance, and supply requisition management. Implementation and use of SESS is strongly recommended.

10.17.2.6 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.17.3 Responsibilities

10.17.3.1 Wings and FRC activities shall:

a. Verify, during all scheduled assist and evaluation visits, that subordinate activities maintain SE in satisfactory material condition.

b. Review and process local MRCs (if applicable) per [Chapter 7](#).

10.17.3.2 The MO and FRC activities shall:

a. Ensure the SE PMS Program is properly managed.

b. Ensure all department SE is maintained in a high state of readiness.

c. Develop local command procedures (as required) per [Appendix D](#).

d. Designate, in writing via the MMP, the MMCO/Production Control Officer as the SE PMS Program Manager.

10.17.3.3 The Program Manager and FRCs shall:

NOTE: A) Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Develop procedures for scheduling all SE Periodic/PM. Include procedures to track hourly/metered requirements. They cannot be scheduled in SESS.
- b. Screen all SE for PMS applicability using the criteria per [paragraph 10.17.2.3](#).
- c. Ensure acceptance inspections and transfer inspections are conducted on all incoming and outgoing SE, using the Support Equipment Acceptance/Transfer Inspection Checklist ([Figures 10.17-1](#) and [10.17-2](#)).
- d. Ensure all SE is preserved as required, including equipment awaiting disposition.
- e. Ensure SE is turned in to the supporting IMA for scheduled maintenance/unscheduled maintenance.
- f. Ensure all scheduled maintenance and unscheduled maintenance requirements are accomplished.
- g. Include all SE periodic inspection due dates in the MMP. Production Controls may use SESS produced monthly schedules instead, with copies forwarded to divisions/work centers for tracking purposes, and a locator sheet in the MMP listing the location of applicable schedules.
- h. Maintain applicable SE records per this instruction.
- i. Monitor status of all SE/AWSE requiring scheduled periodic inspections and generate reports (as necessary) for recalling any SE/AWSE coming due for periodic inspections. Reports shall be sorted by work center, month, and due dates. Activities using SESS may use SESS-produced monthly schedules instead. Forward copies to applicable production areas/work centers for SE tracking purposes. A locator sheet listing the location of applicable schedules may be used instead of multiple copies of the schedules.

10.17.3.4 The QA Officer and FRCs shall:

- a. Designate, in writing via the MMP/SME listing, a QAR/QA Specialist as the SE PMS Program Monitor. This assignment does not preclude other QARs from monitoring this program, but places the overall responsibility with one individual.
- b. Ensure mandatory QA inspections are conducted per applicable references and this instruction. This includes QARs and CDIs performing the functions of spot checker on COMNAVSEASYSCOM MRCs per OPNAVINST 4790.4 to ensure compliance with requirements such as tool control, documentation, and corrosion control.
- c. Review all SE MRCs for QA inspection responsibility and documentation.
- d. Ensure QARs routinely conduct required inspections on all equipment inducted for scheduled maintenance/unscheduled maintenance and upon receipt/transfer of equipment.
- e. Ensure CDI/CDQAR/QAR/QA Specialist candidates receive training to inspect and evaluate material condition of SE per NAVAIR 17-1-125, NAVAIR 01-1A-17, NAVAIR 01-1A-20, and NAVAIR 17-1-537. Coordinate training through the 3M System Coordinator (NEC 9512) or equivalent to include all requirements of NAVEDTRA 43241-H or locally developed training requirements.
- f. Ensure incorporation of all required technical publications, including COMNAVSEASYSCOM MRCs, into the CTPL.
- g. Ensure the Central Technical Publications Librarian reviews all COMNAVSEASYSCOM MRCs to verify that only current MRCs are held in the central and dispersed libraries upon receipt of the FR from the 3M System Coordinator.

10.17.3.5 The Program Monitor and FRCs shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Perform in-process monitoring to ensure the safety procedures prescribed in NAVAIR 00-80T-96 are being followed.

10.17.3.6 Work center supervisors shall:

- a. Ensure Support Equipment Planned Maintenance System Program and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.
- b. Continuously screen all SE within their custody to ensure proper material condition.
- c. Ensure proper configuration of SE within their custody per NALDA TDSA NAT02.
- d. Ensure proper use of SE by work center personnel, including compliance with all procedures outlined in NAVAIR 00-80T-96.
- e. Ensure preoperational inspections are performed prior to each use and periodic inspections are conducted per SE PMS requirements.
- f. Ensure all SE maintenance requirements, including forced removal/replacement, hydrostatic test dates, load testing, and NDI are performed.

10.17.3.7 The Central Technical Publications Librarian and FRCs shall:

- a. Review all COMNAVSEASYSCOM MRCs to verify current MRCs are held in the central and dispersed libraries ([paragraph 10.17.7.2](#)).
- b. Incorporate all required technical publications, including COMNAVSEASYSCOM MRCs, into the CTPL.
- c. Ensure local MRCs are formatted per [Chapter 7](#).

10.17.4 Records/Forms/Documents

10.17.4.1 The SE Custody and Maintenance History Record (OPNAV 4790/51) ([Figures 10.17-3 through 10.17-6](#)) is used to record acceptance information, custody and transfer, record of rework, preservation/depreservation, TDs and inspections that involve NDI, proofload testing, and disassembly/reassembly. This form shall accompany all items of SE that have maintenance requirements and applicable TDs, for example, MRCs, MIMs, and manufacturer's handbook. Exceptions are PME, engine test cells, stands, and GB-1As which have their own records.

10.17.4.1.1 The latest completed copy and current copy shall be retained in Maintenance Control/Production Control. This form will accompany AWSE to the Weapons Department when subcustodied from the IMA.

10.17.4.1.2 The person making the entries will initial all corrections and sign the form. Corrections will be made by drawing a single line through each erroneous entry and inserting the correct entry above or below as space permits. Corrective tape and correction fluid are not authorized. Letters of designation are not required for persons making entries.

10.17.4.1.3 The following are specific documentation procedures for all items of SE requiring SE Custody and Maintenance History Records (OPNAV 4790/51) ([Figures 10.17-3](#) through [10.17-6](#)):

Block 1. NOMENCLATURE: Noun name, such as Mobile Electric Power Plant. The nomenclature in this block shall match the nomenclature on the equipment's applicable MRC deck.

Block 2. MODEL/TYPE: Model/type of equipment, such as NC-8A.

Block 3. SERIAL NUMBER: Serial number of the equipment.

Block 4. MANUFACTURER: Five digit manufacturer's code assigned to end item.

SECTION I - CUSTODY AND TRANSFER RECORD

Block A. DATE: Date (YYMMDD) equipment was transferred.

Block B. FROM: UIC and the name of the activity transferring equipment, for example, 03366/USS America.

Block C. TO: UIC and name of activity to which equipment is being transferred.

Block D. AUTHORITY: References authorizing transfer, for example, message DTG.

Block E. REMARKS: Pertinent comments by shipping/receiving activity, such as RFI, or received damaged

Block F. RECEIVED: Date (YYMMDD) and signature of person making logbook/record entries

SECTION II - RECORD OF REWORK (this section to be filled out by rework activity personnel)

Block A. DATE INDUCTED: Enter date (YYMMDD) equipment was inducted into rework.

Block B. DATE COMPLETED: Enter date (YYMMDD) rework was completed.

Block C. DESCRIPTION OF WORK: Description of work performed, such as complete rework, inspect/repair (as necessary).

Block D. AUTHORIZATION: References authorizing the work, such as directives message DTG.

Block E. ACTIVITY: Rework activity performing work.

Block F. SIGNATURE: Signature of person making logbook/record entries.

SECTION III - PRESERVATION/DE-PRESERVATION

Block A. DATE PRESV.: YYMMDD.

Block B. RE-PRESV. DUE DATE: Pencil entries for preservation integrity checks/represervation due dates.

Block C. TYPE: Self explanatory.

Block D. DATE DE-PRESV.: YYMMDD.

Block E. DIRECTIVE COMPLIED WITH: Self explanatory.

Block F. REASON FOR INACTIVE STATUS: Self explanatory.

Block G. ACTIVITY: Self explanatory.

Block H. SIGNATURE: Signature of person making logbook/record entries.

SECTION IV - TECHNICAL DIRECTIVES

Block A. TECHNICAL DIRECTIVE IDENTIFICATION

Block (1). CODE: TD Code.

Block (2). BASIC: TD basic number.

Block (3). INT: If interim TD enter I. Otherwise, leave blank.

Block (4). REV: Revision letter (if applicable).

Block (5). AM: Numerical amendment number (if applicable).

Block (6). PT: Numerical TD part number, for example, part 01, 02 (if applicable).

Block (7). KIT: Kit number. Enter 00 if no kit is required.

Block (8). PRI: Enter I for Immediate, U for Urgent, R for Routine, or K for Previously Incorporated (record purpose only).

Block B. STATUS: Code indicating status of TD. The only authorized status codes and instructions for their use are as follows:

INC. Indicates TD has been completely incorporated.

NINC. Temporary entry made in pencil to indicate TDs that have been issued but not incorporated and TDs that are only partially incorporated.

NA. TDs that do not apply to the particular model/serial number.

NIS. Entry normally made in pencil, to account for TDs in numeric sequence that have not been issued. Only basic number and status code entries are required. No signature is required.

C. Canceled: Enter TD identification, status code, canceling reference, activity, and signature. No title is required. When an incorporated TD is subsequently canceled, status code remains INC.

Q. (TD Removal): When an incorporated TD is subsequently authorized to be removed, draw a line through INC and insert Q in the same block. Log the authority for removal using Miscellaneous/History section if more room is necessary. If the TD is again incorporated, a complete new entry is required. The original entry with status code Q will remain.

Block C. TITLE/REMARKS: Enter the title and a brief description of the TD.

Block D. COMPLIANCE.

Block (1). BY (Activity): Three-position organization code of activity incorporating TD, for example, AT6.

Block (2). DATE: The date (YYMMDD) TD was completed.

Block E. SIGNATURE: Signature of person making logbook/record entries.

SECTION V - PERIODIC MAINTENANCE RECORD. This section records inspections involving NDI and proofload testing.

Block A. HOURS: NA.

Block B. STARTS: NA.

Block C. REMARKS: Type inspection/test performed, for example, NDI.

Block D. DATE COMPLETED: The date (YYMMDD) maintenance function was completed.

Block E. NEXT PM DATE: NA.

Block F. ACTIVITY: Enter activity performing inspection/test.

Block G. SIGNATURE: Signature of person making logbook/record entries.

SECTION VI - MISCELLANEOUS HISTORY RECORD. This section records significant information for which no other space is provided. Information includes start/hour meter changes, modification of base dates for scheduled PM inspections, replacement of major repairable components (based on SM&R code), hydraulic contamination, abnormal operating characteristics, hydrostatic test dates for nitrogen bottles, forced removal date for applicable hoses, and exposure to large quantities of salt water, fire extinguishing agents, and other corrosive agents.

Block A. DATE: YYMMDD.

Block B. REMARKS: All entries require a signature and short title of the activity making the entry. Refer to Block D for specific entries.

Block C. DATE: YYMMDD.

Block D. REMARKS: All entries require a signature and short title of the activity making the entry. Specific entries include:

Verification for TD applicability. Activities shall download a NALDA TDSA NAT02 with Index Code B TDs at a minimum yearly for review. Annotate with the following statement, "Verified NALDA TDSA NAT02 dated YYMMDD."

For equipment that includes cylinders, annotate with the following statement, "Hydrostatic inspection performed. Date(s) YYMMDD. Serno(s) 123456." (List dates and serial numbers in pencil.)

Annotate forced removal dates for synthetic rubber hoses as follows: "Hose part number MS28741-4-1800, installation date YYMMDD, and forced removal date YYMMDD."

Retain the previous form and the most current form. Ensure the following is transcribed on initiation of a new SE Custody and Maintenance History Record (OPNAV 4790/51):

<u>Section</u>	<u>Data To Be Transcribed</u>
Title	Nomenclature, Model/Type, Serial Number, and Manufacturer's Code
I	Last entry from old record
II	All entries from old record
III	Last entry if item is preserved
IV	All entries from old record
V	Last pertinent entries from old record
VI	Other applicable serial numbers, inspection base dates and other pertinent data.

10.17.4.2 SE Preoperational Record (OPNAV 4790/52). This form shall be maintained by the work center responsible for performing preoperational inspections. It shall be replaced with a new card when completely filled and the old card retained for 30 days from date of last entry.

10.17.4.3 SE Transaction Report (TR) (OPNAV 4790/64). This form is used to record transfer, receipt, and subcustody of SE reported under the IMRL Program.

10.17.4.4 Historical files will be maintained in sequence of TEC and serial number for all items requiring PMS. They shall be organized as follows:

Left Side

Scheduled inspection or maintenance MAFs	Retain current completed PM MAFs until the next like inspection filed in JCN sequence.
--	--

OPNAV 4790/51	. Last completed form and most current form (Figures 10.17-3 through 10.17-6).
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Right Side

Unscheduled maintenance MAFs	Retain for 6 months from completion date, filed in JCN sequence.
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Preservation/Depreservation Checklist	One complete preservation cycle.
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Acceptance/Transfer Figures 10.17-1 and 10.17-2	Retain until the next like inspection.
--	--

Technical Directive MAFs	Retain for 6 months
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NOTES: 1. Historical files and all outstanding discrepancy MAFs shall accompany SE that is transferred or temporarily loaned to another activity.

2. Historical files for SE with 13/26/52 week PM cycles will include the current completed 13, 26, and 52 week PM MAFs, and each inspection MAF shall be purged only after the next like inspection is completed.

3. FRCs with NALCOMIS History Retrieval implemented will store completed MAF data in the NALCOMIS database for 6 months from completion date, and documents in support of PM inspections will be stored for one complete inspection cycle or until SE is transferred. All SE requiring PM inspections will have the current PM MAFs filed and retained in the historical record until the next like inspection. Anytime an FRC with NALCOMIS History Retrieval implemented transfers or temporarily loans SE to another activity, the transferring activity shall produce a NALCOMIS ad hoc SE transfer report (Figure 10.17-7) and send it to the receiving activity.

4. All scheduled (one complete inspection cycle), unscheduled, transfer, and all outstanding discrepancy MAFs shall be printed and placed in historical file and accompany SE that is transferred or temporarily loaned to another activity. O-level activities shall maintain FRC supporting MAFs.

10.17.5 Temporary Issue/Receipt Procedures

10.17.5.1 All personnel shall have in their possession a valid SE operator's license and comply with all applicable safety precautions for specific equipment being checked out/in.

10.17.5.2 Issuing and receiving personnel shall perform a joint preoperational inspection, using applicable MRCs, prior to issue.

10.17.5.3 The SE Custody and Maintenance History Record (OPNAV 4790/51) and the SE Preoperational Record (OPNAV 4790/52) shall accompany items (when applicable).

10.17.5.4 Joint preoperational inspections and inventory shall be performed, using applicable MRCs, upon return of items.

10.17.6 Inspections and Maintenance Procedures

10.17.6.1 Like items maintained in large quantities (10 or more) may be grouped into homogeneous lots for PMS inspections. The size of any lot will not exceed 10 items, the same MRC or MIM must apply to the entire lot and the work must be able to be completed in a normal work shift. For example, an activity has 50 ESD protective mats. One technician can inspect 10 mats in one work day. Rather than issuing 50 MAFs and maintaining 50 SE Custody and Maintenance History Record (OPNAV 4790/51) forms, a command can issue 5 MAFs and maintain 5 SE Custody and Maintenance History Record (OPNAV 4790/51) forms, with serial numbers 1 through 10 on the first, 11 through 20 on the second. Homogeneous lots shall be documented on the SE Custody and Maintenance History Record (OPNAV 4790/51) as follows:

- a. Highlight in yellow the word LOT in block 3.
- b. List the serial number of the first item in block 3 and the remaining serial numbers in Column B of Section VI. Comments may be annotated in pencil in case of changes in serial numbers.
- c. Indicate the reason for noncompliance in Column B of Section VI next to the serial number for that item. If any item in a lot does not receive the required inspection/maintenance/TD compliance action initiate a separate MAF. When the item is inspected or repaired, erase reason for noncompliance from Section VI and record item serial number in remarks column of Section IV or V (as applicable). This will indicate the item was handled separately from the group.
- d. Annotate the lot card to reflect the loss when an item is transferred or deleted. Using information on the lot card, generate a new SE Custody and Maintenance History Record (OPNAV 4790/51) for each item. Transfer this new card and photocopies of historical files with the equipment.

10.17.6.2 Acceptance inspections/transfer inspections will be performed on all SE accepted or transferred by an activity. Inspection requirements ([Figures 10.17-1](#) and [10.17-2](#)) include, but are not limited to:

- a. Initiate a separate MAF for each item of SE, unless provisions of [paragraph 10.17.6.1](#) for homogeneous lot apply. The lead serial number in the BU/SER block (A52) of the lot MAF must coincide with the lead serial number on the lot OPNAV 4790/51.
- b. Inventory of all records and components that make up the item of SE/AWSE.

NOTE: Upon approval by the cognizant SECA, non-RFI SE being transferred shall have all supply documentation attached to the appropriate SE Custody and Maintenance History Record (OPNAV 4790/51). All parts removed for maintenance and all received parts not installed shall be forwarded with the SE.

- c. Verify configuration including TD compliance. This instruction, NALDA TDSA NAT02, OPNAVINST 8000.16, NAVAIR 00-500A, and NAVAIR 00-500C give specific guidance on TD management.
- d. Verify calibration/load testing/forced removal item currency.
- e. Perform preoperational inspection (when applicable).

- f. Perform functional test (when applicable).

10.17.6.3 PM inspections shall be performed at intervals prescribed by applicable MIMs or MRCs. If there is no guidance on PM interval, the MMCO/Production Control Officer shall designate an interval appropriate for maintaining material condition of the equipment. PM which requires internal parts replacement, such as filters, hoses, bearings, load test, or NDI shall be performed by the supporting IMA. All other PM will be performed at the lowest practical level.

10.17.6.4 A single PM inspection MAF may be issued for each lot if items requiring PM have been grouped into homogenous lots. Each serial number on the associated lot OPNAV 4790/51 shall be listed in the discrepancy block immediately following the entry for the applicable PM.

10.17.6.5 Unscheduled maintenance (repair including unscheduled corrosion control) requires a separate MAF for each discrepancy on each item of SE. Lot MAFs are not authorized for repair actions.

10.17.6.6 TD compliance shall be documented on a MAF and on an SE Custody and Maintenance History Record (OPNAV 4790/51). Separate MAFs shall be initiated for each item of SE for each TD compliance action, even if the item is tracked by lot for periodic inspection purposes. Lot MAFs are not authorized for incorporating TDs.

10.17.7 SE Common to Aviation and Ships' 3M

10.17.7.1 Some SE is common to both aviation and surface requirements. For reporting requirements, document everything under aviation 3M procedures.

10.17.7.1.1 Continue to use COMNAVSEASYSCOM MRCs for scheduled maintenance for items without COMNAVAIRSYSCOM MRCs. Document them under aviation 3M requirements.

10.17.7.1.1.1 Verify ships' 3M Maintenance Index Page against the ships' 3M List of Effective Parts and highlight line items to ensure COMNAVSEASYSCOM MRCs are still received.

10.17.7.1.1.2 Verify required SE is listed on the FR to ensure continuous distribution, update, and feedback on all required COMNAVSEASYSCOM publications and MRCs.

10.17.7.1.1.3 Technical publication support from COMNAVSEASYSCOM will continue for all COMNAVSEASYSCOM documentation. Ensure maintenance personnel are trained on procedures for initiating TFBRs to identify discrepancies on COMNAVSEASYSCOM MRCs.

10.17.7.1.1.4 Submit a TFBR to request coverage for new maintenance requirements, to clarify procedures as written in existing documentation, or to request more detail in the procedures to the ACC/TYCOM, via the ships' 3M Coordinator, for all COMNAVSEASYSCOM MRCs.

10.17.7.1.1.5 Initiate a SE Custody and Maintenance History Record (OPNAV 4790/51) for each item of SE covered by ships' 3M. Detailed procedures for proper entries are outlined in [paragraph 10.17.6](#). Cite this chapter in Section I, Block D of the SE Custody and Maintenance History Record (OPNAV 4790/51) as the authority for conversion. Use the following transition codes to convert periodicity codes into aviation terms:

Surface 3M Periodicity Codes

D	1 day	A	365 days or 52 weeks
W	7 days	24M	730 days or 104 weeks
M	28 day or 4 weeks (see note)	48M	1460 days or 208 weeks
Q	91 days or 13 weeks	60M	1824 days or 260 weeks
S	182 days or 26 weeks	84M	2554 days or 364 weeks

NOTE: Schedule on a 30-day cycle for SESS purposes. The 7th position of the WUC shall be B per **Appendix E**.

10.17.7.1.2 Enter all SE into the NALCOMIS database using NALCOMIS (N501) for SE inventory gains.

10.17.7.1.3 For scheduling and reporting purposes, aviation 3M procedures apply. Scheduling in ships' 3M is not required because this is a duplication of effort.

10.17.7.2 Incorporate all COMNAVSEASYSYSCOM publications and MRCs into CTPL control. All NAVAIR 00-25-100 accountability, audit, and control procedures apply. Additional requirements are as follows:

a. QA/CTPL will review all COMNAVSEASYSYSCOM MRCs to verify that only current MRCs are held in CTPL and dispersed libraries upon receipt of the FR from the Surface 3M Coordinator.

b. CTPL clerks shall be trained to verify, correct, and audit the FR. They must complete Surface 3M System NAVEDTRA 43241-H sections pertaining to FR, list of effective pages, Maintenance Index Page, and MRCs or local developed training requirements that cover these areas. The Surface 3M System Coordinator (NEC 9512 or equivalent) can provide training.

c. The Planned Maintenance System (PMS) Feedback Report (OPNAV 4790/7B) shall be used to replace Maintenance Index Page/MRCs, identify COMNAVSEASYSYSCOM technical publications/MRC discrepancies, or request ACC/TYCOM assistance. TFBR is similar to the TPDR for COMNAVAIR-SYSCOM publications. See NAVAIR 00-25-100 for further guidance.

NOTE: Maintenance Index Page/MRCs can be obtained from Automatic Library Technical Manual System CD-ROM. Only when a Maintenance Index Page number is not listed in the CD-ROM are TFBRs submitted to request duplicate issue.

10.17.7.3 COMNAVSEASYSYSCOM MRCs converted to COMNAVAIRSYSCOM requirements for preoperational inspections or conditional inspections may include the following codes:

a. R - Situational Requirement (R-1, R-2, R-1W, etc.) corresponding to COMNAVAIRSYSCOM preoperational inspection or conditional inspection. For example, COMNAVSEASYSYSCOM MRC 6600 R-3 gives maintenance procedures to be accomplished prior to and after each use of eye and face wash portable pressurized tank. When used to perform an independent inspection, the R card requires SE Preoperational Record (OPNAV 4790/52) documentation. When used in conjunction with other cards as part of a scheduled inspection it does not require an SE Preoperational Record (OPNAV 4790/52) entry.

b. U - Unscheduled Maintenance (U-1, U-2, etc.) corresponding to COMNAVAIRSYSCOM unscheduled maintenance.

NOTE: COMNAVSEASYSYSCOM uses U-checks to complement R-cards for repair follow-up. When a U MRC is used, initiate a MAF for unscheduled maintenance.

c. LU - Lay-up maintenance (LU-1, LU-2, etc.) corresponding to COMNAVAIRSYSCOM preservation requirements.

d. PM - Preventive maintenance while in an inactive status (PM-1, PM-2, etc.) correspond to COMNAVAIRSYSCOM preservation integrity checks.

e. SU - Start-up maintenance to transition equipment back to operational status (SU-1, SU-2, etc.) corresponding to COMNAVAIRSYSCOM depreservation requirements.

f. OT - Operational test maintenance to complete transition to operational status (OT-1, OT-2, etc.), corresponding to COMNAVAIRSYSCOM preoperational tests after equipment depreservation or unscheduled maintenance, to verify SE is operational.

SUPPORT EQUIPMENT ACCEPTANCE/TRANSFER INSPECTION CHECKLIST

IMRL MANAGER/SE ASSET MANAGER

Received from: _____ UIC: _____ Date: _____
Transferred to: _____ UIC: _____ Date: _____
Nomenclature: _____
Part No.: _____ Serial No.: _____
Model No.: _____ TEC: _____ CAGE: _____
Authority: _____
Bar Code: _____ Remarks: _____

METROLOGY AND CALIBRATION LAB

Verify calibration requirements: _____ Initials: _____
Calibration interval: _____ Initials: _____
Add calibration requirements for Format 310/350 (if any): _____ Initials: _____

QUALITY ASSURANCE

Reference Manual: _____ Initials: _____
PM Requirements: _____ Initials: _____

MAINTENANCE/PRODUCTION CONTROL

1. Add/Delete in SESS/NALCOMIS Initials: _____
2. Issue MAF JCN: _____ - _____ - _____ Initials: _____
3. Establish/Deactivate Historical Files Initials: _____
4. Screen OPNAV 4790/51:
 - a. Enter Acceptance/Transfer Inspection Initials: _____
 - b. Establish next PM Initials: _____
 - c. Issue PM MAF (if due) Initials: _____
 - d. Ensure PMS Schedule is updated to Add/Delete Item Initials: _____
5. TD compliance verification Initials: _____
6. Remarks: _____

7. Maintenance/Production Control Signature: _____ Date: _____

Figure 10.17-1: Support Equipment Acceptance/Transfer Inspection Checklist

SUPPORT EQUIPMENT ACCEPTANCE/TRANSFER INSPECTION CHECKLIST (continued)

WORK CENTER

1. Verify all required MIMs/MRCs are on hand or on order:

MIM/MRC No.: _____	DOC No.: _____
MIM/MRC No.: _____	DOC No.: _____
MIM/MRC No.: _____	DOC No.: _____

2. Perform Acceptance/Transfer Inspection (as applicable)

a. Inventory all components	Initials: _____
b. Verify configuration	Initials: _____
c. Verify TD compliance	Initials: _____
d. Inspect for corrosion, treat as required	Initials: _____
e. Verify forced removal/hydrostatic test date	Initials: _____
f. Verify current NDI/Load Test	Initials: _____
g. Perform Preoperational Inspection using MRCs	Initials: _____
h. Perform Hydraulic Fluid Analysis (Acceptance Only)	Initials: _____
i. Functional test	Initials: _____

3. CDI Signature _____ Date: _____

4. Division Officer Signature _____ Date: _____

All requirements of this acceptance/transfer inspection have been accomplished and records updated as required by COMNAVAIRFORINST 4790.2.

Work Center Supervisor Signature: _____ Date: _____

QAR/QA Specialist Signature: _____ Date: _____

METCAL Program Manager Signature: _____ Date: _____

IMRL Manager/SE Asset Manager Signature: _____ Date: _____

Logs and Records Signature: _____ Date: _____

Maintenance/Production Control Signature: _____ Date: _____

Document shall be filed in the SE Historical File.

Figure 10.17-2: Support Equipment Acceptance/Transfer Inspection Checklist (continued)

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OPNAVINST 4790.2D

[illegible]

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Figure 10.17-4: SE Custody and Maintenance History Record (OPNAV 4790/51) Page 2

[illegible]

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Figure 10.17-5: SE Custody and Maintenance History Record (OPNAV 4790/51) Page 3

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SE Transfer Report Part 1 SERNO 5MH259															
TEC = "GPC7" AND BUNO/SERNO = "5MH259" AND COMPLETION DATE BETWEEN "09/01/1997" AND "08/31/1997"															
MCN	JCN	W/C	SYSTEM REASON	WUC	TRANS CD	MI	WD	TM	AT	MAL	IP	MAN HRS	EMT HRS	SE METER	COMP DATE
C9CAAR8	C9C094011	980	TT	23BX400	11	1	C	B	C	320	1	0.7	0.7	A0000	97094
C9CAFM9	C9C100A00	950	TT259 14 DAY	030000A	11	1	O	P	0	000	1	2.0	1.0	M0000	97101
C9CATY1	C9C114A00	950	TT259 PM	030000A	11	1	O	P	0	000	1	8.0	4.0	M0000	97115

SE Transfer Report Part 2 SERNO 5MH259					
TEC = "GPC7" AND BUNO/SERNO = "5MH259" AND COMPLETION DATE BETWEEN "09/01/1997" AND "08/31/1997"					
MCN	WORKER SIGN	QA/CDI SIGN	SUPER SIGN	DISCREPANCY	CORR ACTION
C9CAAR8	CTFOX	REBROWN	DIRABCHENUK	UNIT HAS NO BRAKES	BLEED AIR FROM COMPRESSOR
C9CAFM9	B EVANS	LGGRANADOS	LGGRANADOS	C/W 14 DAY STEERING GEARBOX	C/W 14 DAY TORQUE STEERING GE
C9CATY1	B EVANS	LGGRANADOS	LGGRANADOS	C/W 14 DAY STEERING GEARBOX	C/W 14 DAY STEERING GEARBOX T

SE Transfer Report Part 3 SERNO 5MH259											
TEC = "GPC7" AND BUNO/SERNO = "5MH259" AND TRANS CD = "23" AND COMPLETION DATE BETWEEN "09/01/1997" AND "08/31/1997"											
MCN	JCN	W/C	SYSTEM REASON	AT	MAL	REMOV CAGE	REMOV P/N	REMOV SERNO	INSTALL CAGE	INSTALL P/N	INSTALL SERNO
C9CBQX8	C9C137004	980	FLAT TIRE	R	787	96906	GPC7/750X1	0	96906	GPC7/750X1	0
C9CCAZ8	C9C147003	910	TIRE WORN	R	787	29510	HA1321	0	29510	HA1321	0
C9CCVY1	C9C165018	980	R/F TIRE	R	787	29510	HA1321	0	29510	HA1321	0

SE Transfer Report Part 4 SERNO 5MH259													
TEC = "GPC7" AND BUNO/SERNO = "5MH259" AND (TRANS CD = "23" OR TRANS CODE = "12" AND COMPLETION DATE BETWEEN "09/01/1997" AND "08/31/1997"													
MCN	JCN	W/C	SYSTEM REASON	WUC	R/P IND	AT	MAL	CAGE	FAILED P/N	QTY	ORD DATE	DDSN	RCPT DATE
C9CBQX8	C9C137004	980	FLAT TIRE	23BX330				96906	GPC7/750X16-IN1		97137		
C9CCAZ8	C9C147003	910	TIRE WORN	23BX900				29510	HA1321	1	97147		
C9CCVY1	C9C165018	980	R/F TIRE	23BX900				29510	HA1321	1	97165		

SE Transfer Report Part 5 SERNO 5MH259										
TEC = "GPC7" AND BUNO/SERNO = "5MH259" AND TRANS CD = "41" AND COMPLETION DATE BETWEEN "09/01/1997" AND "08/31/1997"										
MCN	JCN	W/C	TD INT	TD CODE	TD BASIC	TD REV	TD AM	TD PART	TD KIT	
C9CSS75	C9C311111	910		62	4124				A1	

Figure 10.17-7: SE Transfer Report (Sample)

10.18 Naval Aviation Metrology and Calibration (METCAL) Program (NAMPSOP)

10.18.1 Introduction

10.18.1.1 The METCAL Program establishes policy, responsibilities, and requirements to ensure SE/TMDE performance is compared to reference CALSTDs of known and sufficiently greater accuracy. Calibration ensures SE/TMDE is operating within established tolerance limits.

10.18.1.2 References:

- a. NAVAIRINST 13640.1, Naval Aviation Metrology and Calibration Program.
- b. OPNAVINST 3960.16A, Navy Test, Measurement, and Diagnostic Equipment (TMDE), Automatic Test (ATS), and Metrology and Calibration.
- c. OP43P6B, Metrology Automated System for Uniform Recall & Reporting (MEASURE).
- d. NAVAIR 17-35NCE-1, Navy Calibration Equipment List (NEC).
- e. NAVAIR 17-35MTL-1, Metrology Requirements List (METRL).
- f. NAVAIR 17-35QAL-15, Naval Aircraft Carrier and Amphibious Assault Ship Metrology and Calibration (METCAL) Program Manual.
- g. NAVAIR 17-35FR-06, Facility Requirements for Navy and Marine Corps Field Calibration Laboratories.
- h. NAVAIR 01-1A-512, Design Guide for Avionics Shop Power Distribution.
- i. NAVAIRINST 13680.1, Depot Level Rework Program for Support Equipment End Items.
- j. NAVSEA SE700-AA-MAN-100, RADIAC Policy and Procedures Manual; Navy RADIAC Program Users Manual.
- k. NAVAIR 17-35QAC-01A, Naval & Marine Corps Calibration Laboratory Audit/Certification Manual.
- l. NAVAIR 17-35POP-01, Metrology and Calibration Program Operations Process Manual.
- m. COMNAVAIRSYSCOM METCAL Fiscal Year (current FY) Scheduling Procedures for Calibration of Aviation Support Equipment (SE), Test, Measurement and Diagnostic Equipment (TMDE), and Calibration Standards (CALSTDs) Letter, referred to in this document as the NAVAIR METCAL Scheduling Letter.

NOTE: This letter, published annually, provides information on POCs, SE/TMDE scheduling, reference CALSTDs repair, on-site calibration, deployment planning, Operation Interlab Program, MEASURE procedures, restricted repair reference CALSTDs, Depot man-hour reporting, flow meter calibration requirements data, AIG, packaging and shipping of reference CALSTDs, and authorized commercial/calibration service providers.

10.18.2 Discussion

10.18.2.1 Calibration compares SE/TMDE to reference CALSTDs of known and sufficiently greater accuracy to detect variation from required performance specifications. As appropriate, repair, adjustment,

alignment, or trimming is required to bring performance of an out-of-specification item to within specified limits. Through the calibration process the traceability of all measured values can be traced through a series of repeatable measurements to nationally accepted references for units of measurement maintained by the NIST and the USNO.

10.18.2.2 The calibration process detects hidden failures within SE/TMDE and as such is treated as on-condition PM tasks by RCM, such as, assets are left in-service on the condition that they continue to meet performance standards. Calibration is mandatory for SE/TMDE and reference CALSTDs used to make quantitative measurements or to provide a reference quantity of known value. Periodic calibration of SE/TMDE on or before the calibration due date recorded on the applied calibration label ensures an acceptable level of measurement reliability is achieved when these assets are called upon for use. Reference CALSTDs are calibrated by reference CALSTDs of even higher accuracy, often in upper echelon calibration laboratories with traceability to national standards maintained by NIST, USNO, natural physical constants, or ratio type calibrations.

10.18.2.3 Maintenance and calibration shall be performed at the maintenance level that can best ensure proper accomplishment, taking into consideration applicable laws, urgency, priority, crew impact, capability, capacity, and total cost of ownership. Calibration is Off-Flight Line level (level 2) or D-level (level 3) maintenance that is conducted at the NPSL, FRC's, Navy Calibration Laboratories, RCCs, Inter-service D-level Calibration Laboratories, and FCAs. FCAs are located in IMA/Work Center 670, or supporting RCCs. COMNAVAIRSYSCOM no longer designates laboratories as Type I, II, III, or IV.

10.18.2.4 Selected FCAs have been augmented with qualified CETS personnel to perform designated D-level calibrations as approved by COMNAVAIRSYSCOM. D-level CETS personnel assigned to expanded capabilities laboratories, known as "X" labs, comply with the QA policies of the parent IMA and perform workload per [paragraph 10.18.5](#).

10.18.2.5 COMNAVSEASYSYSCOM is the lead systems command for the Navy's METCAL Program. OPNAVINST 3960.16 outlines the responsibilities of the lead systems command.

10.18.2.6 OPNAVINST 3960.16 and NAVAIRINST 13640.1 prescribe policies for the Naval Aviation METCAL Program. COMNAVAIRSYSCOM (AIR-6.7.6.3) METCAL Program Office provides policy, procedures, management, and funding for the Naval Aviation METCAL Program. COMNAVSEASYSYSCOM is the lead systems command for the Navy METCAL Program and is the ISSC for calibration and related matters.

10.18.2.7 MEASURE is the MIS for the METCAL Program. OP43P6B outlines procedures applying to calibration laboratories/activities using MEASURE. METER Cards are used when inducting SE/TMDE for calibration/repair. All calibration/repair data will be recorded on the METER Card. Completed METER Cards are entered into MIQ program for transmittal to MOCC. MOCCs in Norfolk, VA and San Diego, CA publish and monitor equipment recall schedules to provide for automated recall, workload/funding requirements, and technical data used by Measurement Science Department (NWA MSB) Corona, CA in support of the METCAL Program. The following typical formats are described in OP43P6B:

a. Inventory Format 310 lists all calibratable PME/TMDE under a customer activity's cognizance. It provides part number, serial number, subcustodian, calibration interval, and next due date. Format 310 is maintained by the customer activity.

b. Format 311 provides each calibration activity with an inventory of their reference CALSTDs. This inventory is extracted from the parent Format 310.

c. Inventory Format 350 lists items from the parent Format 310 for which the subcustodian is responsible. It is normally distributed by customer activities and maintained by subcustodians.

d. Recall Format 805 lists all equipment scheduled into a laboratory, by due date; that is overdue for calibration, due calibration in the present month and the upcoming 2 months.

e. Recall Format 802 is a recall listing of items due for turn-in to the calibration laboratory. It is distributed to customer activities monthly and sequenced by subcustodian. It lists items overdue for calibration, due calibration in the present month and the upcoming 2 months. Customer activities distribute Format 802 reports to appropriate subcustodians.

10.18.2.8 All reference CALSTDs and calibratable SE/TMDE must be labeled to indicate calibration status, when last calibrated, by what activity, calibration next due date, and special conditions of use. Dates shall be written month/day/year, mm/dd/yyyy, the three-letter laboratory code of the servicing activity written or stamped on each label/tag, and item serial number annotated in the space provided (if available). [Figures 10.18-1](#) through [10.18-5](#) identify calibration labels and tags for the following categories:

a. CALIBRATED (NAVSEA 4734/8, NAVSEA 4734/9, and NAVSEA 4734/11) are the most commonly used labels in the Navy METCAL Program. They indicate the instrument is within tolerance on all parameters and there are no qualifying conditions for use as specified by the calibration procedure.

b. CALIBRATED - The Report of Calibration (NAVSEA 4734/13) is used when actual measurement values and associated uncertainties must be known.

c. SPECIAL CALIBRATION (NAVSEA 4734/15 and NAVSEA 4734/16) are used when unusual or special conditions should be noted, such as deviations from usual calibration tolerances, multiple calibration intervals, a special requirement for in-place calibration or to refer to a correction factor chart.

(1) Deviation from specifications. In cases where the user does not require full instrument capability, the calibration could be performed to reduced tolerances or cover less than all ranges or functions. Special Calibrations may not be used to reduce the accuracy stated in the ICP unless directed by the ICP or NAVAIRSYSCOM (AIR 6.7.6.3).

(2) Multiple Calibration Intervals. Some instruments have components which require calibration less frequently than the rest of the instrument. For example, the attenuator in a signal generator may require calibration every 12 months. Since the attenuator calibration is time consuming and may require unavailable standards, use of the multiple interval approach can save considerable man-hours as well as permit the more frequent calibration to be performed at a lower level laboratory. When a specific instrument has been designated for multiple calibration intervals, such information is provided in the applicable calibration procedure. The special calibration label or tag is annotated with "Multiple Interval" and the type of calibration performed is indicated, for example, partial 1 of 2, 2 of 2, complete calibration. The calibration due date reflects the due date of the next partial or complete calibration (as appropriate).

(3) Calibrated "In-Place". Some instruments should be calibrated in-place. Annotation on the special calibration label or tag will alert both user and calibrator the instrument should not be removed, but should be calibrated "in-place".

(4) Acceptance of vendor calibration labels. Placed next to a vendor calibration label to indicate the vendor is authorized to perform the calibration. Due date on label will correspond to the METRL cycle, not the vendor's calibration cycle.

(5) Acceptance of initial calibration or authorized service provider calibration labels:

1) Transfer the information from the Certificate of Calibration to a METER card to account for the calibration. Indicate the correct condition received by the service provider in block 61. As found data, if out-of-tolerance, will be documented in blocks 30 through 35 of the METER card. Servicing lab code (block 21) will be that of the receiving laboratory. Servicing label attached (block 59) will be a Special Calibration label. The Next Due Date (block 29) will be calculated based on the service provider's calibration date and applying the calibration cycle listed for the asset in NA17-35MTL-1 (METRL). Attach a copy of the Certificate of Calibration to the METER card. Additional guidance can be found in NAVAIR METCAL Scheduling Letter.

2) If the service provider's calibration label can be removed without damaging the label, remove it and attach to the buff copy of the METER card using transparent tape. If the label would be damaged, leave it on the asset.

3) Attach a Special Calibration label to the instrument as close as possible to the service provider's calibration decal, or where the service providers label was. The Special Calibration label shall state "(Service providers name) calibration is accepted per (state authority, such as NAMP, NAVAIR METCAL Scheduling Letter, or METRL. Ensure the Next Due Date on the Special Calibration label agrees with block 29 of the MEASURE METER card.

d. USER CALIBRATION (NAVSEA 4734/19) designates calibration performed by the user. This label is not replaced at each calibration. Requirements and calibration intervals (each use, daily, weekly, every 100 hours, etc.) are listed in the METRL.

e. INACTIVE (NAVSEA 4734/17) remains on the instrument until it is recalibrated. The instrument is not to be used while bearing this label.

f. CALIBRATION NOT REQUIRED (NCR) Not Used for Quantitative Measurement (NAVSEA 4734/26 and NAVSEA 4734/27) remains on the instrument indefinitely unless calibration requirements change. SE not requiring calibration is shown as NCR in the METRL. METRL Section 1 also contains criteria for placing instruments in the NCR category.

g. REJECTED (NAVSEA 4734/7). Used when an instrument fails to meet calibration criteria. Instruments shall not be used while bearing this tag.

h. CALIBRATION VOID IF SEAL BROKEN (NAVSEA 4734/28) and (NAVSEA 4734/29) is placed over readily accessible (usually exterior) calibration/adjustment points to prevent tampering that could affect calibration. These labels may also be used to prevent removal/interchange of plug-ins, modules, subassemblies, etc., when such removal or interchange will affect the calibration. The use of these labels to detect if instrument covers/faceplates have been removed is discouraged.

i. CALIBRATION STANDARD (NAVSEA 4734/21 and NAVSEA 4734/22) identifies METCAL Program reference CALSTDs. This label shall not be affixed to IMRL assets.

j. CLEANED FOR OXYGEN SERVICE (NAVSEA 4734/23) is required on oxygen system SE requiring special cleaning and contamination control incidental to the calibration process.

k. WARNING CLEANED FOR OXYGEN SERVICE (NAVSEA 4734/20) is a packaging label for oxygen system SE/TMDE requiring special cleaning and contamination control processing. This label, affixed to the outer wrapping after an instrument has been cleaned and calibrated, is used in addition to the CLEANED FOR OXYGEN SERVICE (NAVSEA 4734/23) label.

10.18.2.9 Authorized calibration service providers are non-navy calibration facilities that have been approved by COMNAVAIRSYSCOM METCAL Program as meeting the requirements of reference (11). A

listing of the authorized calibration providers is maintained by NAVAIR METCAL Program Office (AIR-6.7.6.3). Calibration services by an authorized calibration provider may be accepted by a NAVAIR cognizant calibration laboratory by applying a special calibration sticker to the asset stating the authority that authorizes acceptance (authorized service providers list or NA17-35MTL-1 remarks entry) and applying the calibration cycle listed in NA17-35MTL-1.

10.18.2.10 For IMAs:

a. AIG 9913 (COMNAVAIRSYSCOM), AIG 428 (COMNAVAIRFOR) messages provide policy and information relative to the FCA METCAL Program and repair of SE. AIG 9938 (MOCC Norfolk FCAs and laboratories), AIG 7692 (MOCC San Diego customers) and AIG 9929 (MOCC San Diego FCAs and laboratories) messages pertain to the MEASURE Program.

b. Aircraft carriers and amphibious assault ships have historically operated three separate calibration programs managed by the AIMD Officer, the Operations Officer, and either the Engineering or Reactor Officer. NAVAIR 17-35QAL-15 defines organization and responsibilities for the METCAL Program as they relate to the CV/CVN/LHA/LHD community.

c. All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

d. The IMA is responsible for inventory control and calibration of equipment held for issue to O-level activities. A METER Card (OPNAV 4790/58) is used for inducting SE for calibration or authorized repairs. All calibration/repair data will be recorded on the METER Card (as appropriate). VIDS/MAFs are not required.

(1) All calibratable SE/PME/TMDE are forwarded through Work Center 670 at each IMA. Work Center 67A shall be established to handle these responsibilities wherever regionalization has occurred. Within the IMA, the METCAL Program Manager is responsible for coordinating the recall of equipment for calibration, and the physical movement of equipment and follow-up, to ensure prompt return of equipment to users after calibration.

(2) The date an item is due calibration may be found in the Recall Format 800 series, the Inventory Format 310 and 350 series, and on the decal attached to the equipment. The focal point for recall is the supporting IMA. See OP43P6B for further recall information.

e. IMRL assets may be used to perform calibration provided they are called for in an authorized calibration procedure. IMRL shall not be requisitioned for calibration use, designated as calibration standards, or provided priority calibration. Additionally, IMRL shall not be repaired using COMNAVAIRSYSCOM calibration funds or included in TYCOM managed calibration standards inventories.

NOTE: NAVAIR 17-35NCE-1 provides listings of primary standards and substitutes. Questions regarding standards equivalency shall be referred to the NSWC-MSD Corona, CA via the cognizant ACC/TYCOM.

f. I-level calibration standards are under inventory control of the cognizant TYCOM and shall not be reported under the AMMRL Program. Funding for calibration and repair of FCA standards is provided by COMNAVAIRSYSCOM METCAL PST. I-level calibration standards shall not be loaned out/used by other work centers with the exception of ATE calibration.

10.18.3 Responsibilities

10.18.3.1 The FCA and I-level shall:

a. Ensure the calibration work areas meet all environmental and facility requirements per NAVAIR 17-35FR-06, NAVAIR 01-1A-512, and the following:

(1) Record probable causes for significant temperature and humidity changes that exceed specified limits, such as power outage and air conditioner failure, in a paper or electronic log. Maintain all recorded data on file for a minimum of 1 year.

(2) Supervise all calibration technicians assigned to the calibration laboratory. Ensure compliance with safety regulations. Electrical retrieval devices (ropes, canes, etc.) shall be readily available and safety posters prominently displayed. Use appropriate safety attire, such as goggles, gloves, and aprons. Section 1 of NAVAIR 17-35FR-06 contains additional details on safety requirements.

b. Ensure military and civilian personnel performing calibration are graduates of approved calibration training courses per NAVAIR 17-35POP-01. Navy personnel shall be from electronics technical ratings and possess one of the following NECs: 6673, 6718, or 1589. Marine Corps personnel must possess MOS 6492. The following are exceptions to these requirements:

(1) Personnel from other ratings/MOS may perform basic physical/mechanical calibration actions, Phase B and D, if properly trained, qualified, and documented through local professional training/OJT. Calibration work center supervisors, at a minimum, must provide final qualification verification for personnel using OJT as a qualification standard.

(2) Activities supporting the following ATE benches can use the listed NECs to perform calibration of, and apply the calibration label to, the listed ATE bench: ATE calibration requires documentation on the MEASURE METER Card.

Bench	NEC	MOS	Remarks
AN/USM-636 CASS	6705	6467	Prior to CASS course consolidation
AN/USM-636 CASS	6704	6467	After CASS course consolidation
AN/USM-449 ATE	6721		
AN/USM-484 HTS	6688	6461	

c. Establish a PME/TMDE Production Control Work Center 67A. When the FCA has been transferred to a Regional Calibration Center, the IMA will retain Production Control Work Center 67A and perform the same functions previously performed by the FCA.

d. Maintain approved instrument calibration procedures, and commercial maintenance manuals for calibration or repair of SE within the FCA work area. They are to be updated and purged regularly.

e. Perform SE/PME/TMDE calibration at established intervals, using appropriate calibration procedures in NAVAIR 17-35MTL-1, and affix applicable labels and tags.

f. Monitor and evaluate items inducted into higher level calibration activities for feasibility of calibrating at the FCA level in support of "calibrating at the lowest level possible" concept.

g. Initiate depot repair actions on IMRL assets per NAVAIRINST 13680.1 if repair is beyond FCA capability. To initiate exchange of general purpose electronics test equipment, refer to appropriate TYCOM SERMIS and IMRL guidelines.

h. Submit recommended changes to the SE Repair Program (SERMIS Systems 835, 835A, and 835B) per applicable TYCOM SERMIS and IMRL directives.

i. Augment FCA calibration and repair capabilities with SE contained in the activity IMRL. As IMRL assets, no standards decal ("meat ball") will be affixed. Additionally, COMNAVAIRSYSCOM METCAL Program funds shall not be used for their repair. Phase R5 assets are specifically designated for use in the test equipment repair center and are listed in SERMIS Systems 835, 835A, and 835B. Other SE for SE IMRL systems may also be used to augment calibration or repair capability.

NOTE: Phase R5 SE shall not have a standards decal affixed or be reported on Inventory Format 311.

j. Submit I-level calibration standards for calibration per intervals established by NAVAIR 17-35MTL-1. FCAs are authorized to repair and calibrate the standards within their capability. Repair of the remaining calibration standards shall be limited to their externally accessible components, for example, power cords, fuses, and indicator lights. Preventive maintenance actions, such as lubrication and cleaning of filters not affecting the accuracy of the standard, will be accomplished at the I-level. Calibration standards not within the capability of the FCA will be identified to the COMNAVAIRSYSCOM METCAL Program Manager. Recommendations concerning additional items of SE to be included in the I-level calibration segment of the METCAL Program shall be submitted to the cognizant TYCOM.

k. Periodically, review each calibration standard held for its current applicability. Evaluate FCA standards requirements using NAVAIR 17-35NCE-1. Further, each newly received standard must be compared with NAVAIR 17-35NCE-1. Identify all obsolete, excess, redundant, unused, substitute, duplicate, rejected, and other standards no longer required which may be purged from the FCA inventory, to the appropriate TYCOM METCAL Program Manager. FCA standards shall not be inactivated.

l. Submit requirements for additional phases, standards, temporary replacement standards, or for disposition instructions for excess standards to appropriate TYCOM via facsimile, letter, or message. Include the following data (as appropriate):

(1) Work load candidates by model/part number, quantity serviced, aircraft/weapons system supported, and depot man-hour avoidance if calibrated by the FCA.

(2) Instrument calibration procedures and standards listed therein. Review NAVAIR 17-35NCE-1 for additional substitutes and identify suitable alternates.

(3) If a loan standard is required, identify the servicing laboratory holding the failed standard and describe the nature of the failure.

(4) Identify excess calibration standards, with rationale for deletion, to obtain disposition instructions and authority to delete standards from the MEASURE inventory. See [paragraph 10.18.3.1ac](#) for standards deletion procedures.

m. Manage calibration standards required for ATE support and designated in NAVAIR 17-35NCE-1 phase packages for METCAL Program contingency support packages. These standards may be used in support of ATE, such as Hybrid Test Stations, Radar Communication Test Stations, Radar Set Test Stations, Electro Optical Test Stations, Intermediate Automated Test Stations, CASS Test Stations, Electro Optical Test Stations, and Servo Cylinder Test Stations. They are controlled, reported, calibrated, and repaired exactly like other FCA calibration standards and may be temporarily distributed to the work center as use requirements dictate and as requested. Calibration standards specifically designated for CASS are usually held in the appropriate user work center. Calibration standards not required for full time CASS station operation may also be used by the FCA to augment calibration capability.

n. Use the calibration standards ISSC METCAL PST (Team 2) as engineering support for METCAL standards and related matters.

o. Document all calibration and repair actions on a METER Card (OPNAV 4790/58) per OP43P6B. In addition to MEASURE documentation, document repair and calibration actions to NALCOMIS to facilitate parts procurement. Only repair actions requiring parts procurement will be entered into NALCOMIS.

p. Ensure QA functions prescribed in this instruction are applied to the I-level calibration effort. The inspector's stamp/signature shall be affixed to the buff copy of the METER Card (OPNAV 4790/58) in the quality verification section.

q. Comply with the D-level calibration man-hour account management guidelines as follows:

(1) Ensure D-level recall schedules do not include SE authorized to be calibrated by FCAs if capability exists. If SE becomes temporarily beyond the FCA capability, for example, personnel, standards, or publications, calibration services may be obtained from a regional FCA, Navy Calibration Laboratory, Mobile Calibration Complex, or FRC upon scheduling by COMNAVAIRSYSCOM METCAL PST.

(2) Forward SE/TMDE scheduled for induction into D-level laboratories and above to the designated laboratory via the METCAL Program Manager. This will ensure only operable SE/TMDE are forwarded to the D-level calibration laboratories. Equipment scheduled for calibration will be checked for operable condition. SE/TMDE found to require repair will be returned to the appropriate work center for repair or processed under the SE rework program (as applicable). The cost of repair and calibration of I-level metrology standards by D-level facilities is a responsibility of the COMNAVAIRSYSCOM METCAL PST.

(3) Use the METCAL Program Invoice ([Figure 10.18-6](#)) or similar form, when transferring/inducting aviation SE into COMNAVAIRSYSCOM-approved outside calibration/repair activities. A properly completed METER Card (OPNAV 4790/58) is also required for each asset.

(4) D-level man-hour allocations are provided to each COMNAVAIRSYSCOM customer for calibration support of IMRL assets and FCA standards. An analysis of these qualifying customers' D-level calibration requirements is made approximately 30 days prior to the beginning of each fiscal year quarter. Based on available funding, a portion of these requirements is allocated to each customer. Prudent use of these man-hours is paramount to the successful support of fleet operational commitments.

(5) Use the standard man-hour figure shown on MEASURE Inventory Format 310 to track man-hour utilization by reducing the appropriate man-hour account with each submission of an asset. MEASURE reports, MSRPT14 (weekly summary of man-hours used), and MSRPT15 (weekly itemized list of assets submitted) provide feedback of man-hour utilization. Immediately, notify appropriate TYCOM of discrepancies. Prioritize depot workload to ensure the most important assets are calibrated within the allocated hours.

(6) Induction of standards and SE into depot laboratories beyond authorized man-hour allocations shall be authorized by the COMNAVAIRSYSCOM METCAL Program Manager.

(7) When D-level calibration requirements are expected to exceed allocated man-hours, forward requests for additional man-hours via facsimile, letter, or message to appropriate TYCOM. Ships pre-deployment depot calibration requirements are an example of a valid condition for an increased allocation. Obtain COMNAVAIRSYSCOM authorization for additional man-hours prior to submitting standards or SE for depot calibration services.

r. Ensure nonaviation (non-IMRL) SE forwarded to COMNAVAIRSYSCOM D-level calibration laboratories for calibration/rework is clearly identified as nonaviation SE and is submitted under separate

shipping documents from aviation SE and standards. Nonaviation SE will only be accepted by COMNAVAIRSYSCOM D-level calibration laboratories when related calibration/repair funding has been identified and cited. All calibratable SE shall be forwarded through Work Center 670. Work Center 67A shall be established to handle these responsibilities wherever regionalization has occurred.

s. Deliver and pick up SE to/from SE custodians and, if practical, adjacent tenant activities. Ensure proper handling, transportation, and storage of calibratable SE/PME/TMDE to preclude equipment damage. Protective measures shall include:

(1) ESD protective shielding material shall be used on all exposed electrical connectors for equipment requiring special ESD protection.

(2) Use tie down cords and padding, such as horse hair and bubble wrap, in sufficient quantity, to preclude damage during transportation.

(3) Adequate environmental protection.

(4) Properly trained vehicle drivers.

t. Calibration/repair of oxygen gauges is NOT AUTHORIZED at the FCA level.

u. Ensure radiac equipment is calibrated and repaired per NAVSEA SE700-AA-MAN-100. POCs are provided in the annual COMNAVAIRSYSCOM scheduling letter. Radiac interval extension request information is addressed in [paragraph 10.18.5.6](#).

v. Schedule/perform calibration services on jet engine test cells consistent with the intervals cited in NAVAIR 17-35MTL-1. All special D-level calibration services required prior to the correlation process shall be performed by the activity performing the correlation.

w. Provide calibration and repair support for CENNAVAVNTECHTRAU SE.

x. Screen inducted items for required SECs/SEBs and incorporate outstanding requirements per local procedures.

y. Maintain a file of METCAL Program directives and AIG messages in the FCA Work Center. Retain METCAL AIG messages for a minimum of 1 year.

z. Review NSWC MSD Corona, CA monthly metrology bulletins for pertinent METCAL Program information. See [paragraph 10.18.5.7](#) for interval change information.

aa. Initiate misuse/abuse reports with QA for items where negligence is suspected.

ab. Report calibration standards inventory additions via the METER Card (OPNAV 4790/58) ensuring subcustodian and Phase are properly completed and block 65 is checked as "X". Sign and mail the DD 1149/DD 1348 to the Calibration Standards Ready Issue Activity.

ac. Submit MEASURE Inventory Format 311 standards deletion as follows:

(1) Forward a request to delete calibration standards via facsimile, letter, or message to the TYCOM with an information copy to the cognizant MOCC and other chain of command activities as appropriate. Describe the standard to be deleted and rationale for deletion.

(2) When delete authority is obtained, annotate the METER Card (OPNAV 4790/58) with the delete authorization number and forward to MOCC. The MOCC will return, unprocessed, standards deletion METER Cards that are not annotated with a delete number.

(3) Ensure standards are properly packaged. Annotate the outside of each standard with the model number, serial number, and next due date. Additional information is contained in the annual NAVAIR METCAL Program Scheduling Letter. Provide pertinent information on rejected standards. When prior authorization has been obtained, forward calibration standards to the appropriate Calibration Standards Ready Issue Activity listed below:

NAVAIR CALIBRATION STANDARDS READY ISSUE ACTIVITY (CSRIA)
ATTN: FCA STANDARDS
BUILDING 612 BAY 9
MARINE CORPS AIR STATION
BEAUFORT SC 29904-5017

10.18.3.2 The MO/FRC-equivalent officer shall:

- a. Designate, in writing via the MMP, a METCAL Program Manager (O-level).
- b. Develop local command procedures (as required) per [Appendix D](#).
- c. Ensure requirements of NAVAIR 17-35FR-06 are met upon establishment of an FCA, and maintained to those requirements.
- d. Ensure requirements of [paragraph 10.18.5](#) are followed for calibration extensions.
- e. Ensure manpower requirements, manning, and staffing levels reflected in the Navy AMD, SMD, and Marine Corps Table of Organization (as applicable) are kept updated to provide adequate personnel for support of the FCA effort.
- f. Ensure a vehicle is assigned to the FCA (shore-based only) and that it meets vibration and weather protection requirements per NAVAIR 17-35FR-06.
- g. Ensure the afloat FCA is staffed per NAVAIR 17-35QAL-15.

10.18.3.3 The Avionics Division Officer shall designate, in writing via the MMP, a METCAL Program Manager (IMA only).

10.18.3.4 The METCAL Program Manager (IMA) shall:

NOTE: A) Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Implement and manage the IMA's METCAL Program.
- b. Ensure all calibratable SE/PME/TMDE is forwarded through Work Center 670. Work Center 67A shall be established to handle these responsibilities wherever regionalization has occurred.
- c. Monitor recall of equipment for calibration.
- d. Update and correct Inventory Format 310, 311 and 350 reports (including Inventory Format 350 reports returned from other work centers) and submit necessary changes to the designated MOCC per OP43P6B. Designate safety related SE on the MEASURE inventory per [paragraph 10.18.5.4](#).

e. Ensure that all TMDE or standards submitted for repair are processed with a completed Support Equipment Discrepancy Report ([Figure 10.18-7](#)).

f. Maintain a program file to include:

- (1) Program related correspondence and message traffic.
- (2) Applicable references or cross reference locator sheets.

10.18.3.5 The METCAL Program Manager (O-level) shall:

NOTE: A) Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Ensure timely delivery of SE/PME/TMDE scheduled for calibration to Work Center 670. Work Center 67A shall be established to handle these responsibilities wherever regionalization has occurred. Obtain a receipt, and follow up to ensure prompt return of equipment after calibration.

b. Ensure equipment is turned in complete with cables, accessories, charts, and peculiar technical data required during calibration. Indicate any missing items or nonoperational conditions.

c. Induct for repair all nonoperational or suspect SE/PME/TMDE regardless of actual calibration due date. Provide complete written description ([Figure 10.18-7](#) or similar form) of discrepancies for each item.

d. Update MEASURE data via the FCA whenever SE/PME/TMDE is transferred or received.

e. Retain METER Card (OPNAV 4790/58) pink copies until Inventory Format 350 reflects new calibration date.

f. Update and return corrected original Format 350 report to the supporting customer activity within 5 working days. Retain a copy on file until corrections appear on subsequent reports. Maintain current Format 802 to assist in timely submission of SE/PME/TMDE.

g. Ensure SE/PME/TMDE are handled, transported, and stored per [paragraph 10.18.3s](#).

h. Advise chain of command of critical shortages of SE/PME/TMDE required to meet operational commitments

i. Ensure items requiring local one-time interval extensions meet all the conditions per [paragraph 10.18.5](#).

j. Designate safety related SE on MEASURE inventory per [paragraph 10.18.5.4](#).

k. Plan calibration of SE to minimize equipment becoming due date expiration during deployment.

l. Arrange for calibration services from an in-area FCA or Navy Calibration Laboratory, for example, an FCA within the battle group or on a nearby CV, CVN, LHA, or LHD having calibration capability (if deployed without direct FCA support).

m. Coordinate deployment requirements with the supporting FCA using [paragraph 10.18.4](#) as a guide.

n. Maintain a program file to include:

- (1) Program related correspondence and message traffic.
- (2) Applicable references or cross reference locator sheets.

10.18.3.6 The QA Officer shall designate, in writing via the MMP, a QAR as the Naval Aviation METCAL Program Monitor. This assignment does not preclude other qualified QARs from monitoring this program, but places the overall responsibility with one individual.

10.18.3.7 The Program Monitor shall perform audits using CSEC per [paragraph 10.7](#).

10.18.3.8 The IMRL Manager shall route all SE transfers and receipts through the METCAL Program Manager (O-level)/Work Center 67A (I-level) to ensure MEASURE reports are updated.

10.18.3.9 Work Center 67A shall:

a. Review MEASURE Inventory Formats 310 and 311 monthly upon receipt and submit required corrections to the cognizant MOCC within ten working days. OP43P6B gives detailed procedures. Give special attention to new or recently received items which may not have been previously reported.

b. Receive and distribute Inventory Format 350 and Recall Format 802 reports to appropriate subcustodians.

c. Update Work Center 67A's Inventory Format 310 and Recall Format 805 reports using inputs from subcustodian's Inventory Format 350 report.

d. Maintain a VIDS board per [Chapter 6](#) (non-NALCOMIS).

e. Recall all items due calibration using the following sources:

(1) Recall Format 800 series are published monthly and project quarterly requirements. The focal point for recall is the supporting IMA. See OP43P6B for recall format information.

(2) Inventory Format 300 series list items by part number. See OP43P6B for inventory format information.

(3) Decal attached to equipment.

f. Notify QA of any item noted on MEASURE reports as being overdue for calibration.

g. Ensure PME/TMDE inducted for calibration or repair are accompanied by a preprinted METER Card (OPNAV 4790/58). If the preprinted METER Card is not available, hand scribe a METER Card using all available data, for example, MEASURE reports, equipment data plate, and publications.

h. Verify all SE have a serial number assigned. If no serial number is affixed to the equipment by the manufacturer, the FCA shall assign a serial number per OP43P6B.

i. Ensure proper use of all METER Card (OPNAV 4790/58) parts per OP43P6B, page C-1. Ensure inspectors use QA stamps or stamp number in the quality verification steps when required and list model and serial number of all standards used. File all buff copies in Inventory Format 310 order and maintain on file for 12 months or one calibration cycle, whichever is greater.

NOTE: For items returned from outside activities without a buff copy, copy the pink section and file as a buff.

j. Provide initial and periodic training to all subcustodian calibration representatives, such as calibration petty officers, on the proper use of MEASURE reports and local induction/receipt policies.

k. Review all AMMRL transfers/receipts to ensure timely update of appropriate MEASURE data.

l. Manage the transportation, tracking, and receiving of all items inducted into outside calibration facilities.

m. Ensure items requiring local one-time interval extensions meet all the conditions per [paragraph 10.18.5](#).

10.18.3.10 Work center supervisors shall:

a. Ensure Naval Aviation METCAL Program and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.

b. Ensure all SE/PME/TMDE under MEASURE is properly calibrated, paying special attention to recently received items that may have not been previously reported. Do not use equipment without valid calibration labels or items with damaged "CALIBRATION VOID IF SEAL BROKEN" labels.

c. (IMA only): Update and return corrected original Inventory Format 350 report to the METCAL Program Manager within 5 working days. Retain a copy on file until corrections appear on subsequent reports. Maintain current Format 802 to assist in timely submission of all SE/PME/TMDE.

d. Turn in all nonoperational and suspect PME/TMDE regardless of actual calibration due date. Ensure all required cables, accessories, charts, and peculiar technical data are included. Provide a complete written description of discrepancies ([Figure 10.18-7](#) or similar form) for each item inducted for repair.

e. Replace all "REJECTED" items via appropriate supply channels. Dispose of consumable "REJECTED" TMDE/PME per local policy.

f. Update MEASURE data via the FCA when SE/PME/TMDE are transferred or received.

g. (IMA/FRC only): Retain METER Card (OPNAV 4790/58) pink copies until Inventory Format 350 reflects new calibration date. Ensure data fields on the pink copy match the new Inventory Format 350 data.

h. Ensure SE/PME/TMDE are handled, transported, and stored per [paragraph 10.18.3.1s](#).

10.18.4 Deployment Operating Procedures

10.18.4.1 Less than 90 days:

a. Sixty days prior to deployment, review METCAL requirements and annotate shortages and due dates of assets held by squadron or detachment.

b. Thirty days prior to deployment, review METCAL requirements with Type Wing and supporting FCA Program Manager. All possible effort must be made to ensure due dates extend beyond the scheduled return date.

NOTE: Ensure SE that cannot be supported by the cognizant FCA while deployed are calibrated prior to deployment.

c. Five days prior to departure, pick up Inventory Format 350 and preprinted METER Cards from the FCA.

NOTE: Recall formats for deployment periods of 90 days or less are not required. As deployments of longer than 90 days require flagging of MEASURE products, recall data will be provided by the appropriate MOCC.

d. While deployed, ensure MEASURE reports are updated as calibration actions are completed by the supporting FCA. Mail copies of completed transactions to the home FCA a minimum of once per month. Retain the METER Card (OPNAV 4790/58) pink copies. Following deployment, provide the original pink copies to the home FCA. Detachments are to forward MEASURE update information to the home FCA via their parent squadron.

10.18.4.2 Ninety days or greater.

a. MEASURE customer activities will notify the appropriate MOCC of subcustodian deployment approximately 45 days prior to deployment to flag all MEASURE products for the deploying subcustodian. In the case of a "short fuse" deployment, notify the appropriate MOCC as soon as possible. Notification will include MEASURE customer code, subcustodian, deployment address, and effective date of flagging. Upon completion of deployment the customer activity will notify the appropriate MOCC that the subcustodian has returned and submit request to deflag their MEASURE products.

b. Upon notification of deployment and while deployed to the Mediterranean or WESTPAC:

(1) Calibration requirements and tentative locations will be discussed at TYCOM predeployment conferences and with appropriate area of responsibility coordinators.

(2) Supporting MOCC will print and distribute Inventory Formats 310 and 350, Recall Formats 802 and 805, and preprinted METER Cards (as applicable).

(3) Upon completion of calibration services, Mediterranean area COMNAVAIRSYSCOM calibration laboratories will process METER Cards and transmit data to Regional Control Center Sigonella for further transmission to MOCC Norfolk, VA.

(4) All deployed customers/subcustodians will send completed METER cards to supporting MOCC for processing and printing/distribution of preprinted METER cards and updating of the MEASURE database.

(5) Upon completion of deployment, equipment requiring calibration will be forwarded to regularly scheduled laboratories as before.

c. COMNAVAIRSYSCOM METCAL PST will advise CVs/CVNs/LHAs/LHDs of items that can be calibrated by local area calibration laboratories during deployment.

d. During deployment, COMNAVAIRSYSCOM, will be the primary authority for induction of assets at calibration laboratories. Add-to-inventory items may also be delivered to supporting calibration laboratories (as required) with COMNAVAIRSYSCOM METCAL PST authorization.

10.18.5 METCAL Interval Extension Policy

10.18.5.1 Operational circumstances may inhibit the performance of scheduled calibration services. Accordingly, and only under critical/unusual situations, deployed AIMD MOs are authorized to extend SE calibration intervals except for flight or personnel safety SE. The maximum local extension term is limited to one interval per the current NAVAIR 17-35MTL-1 or 4 months, whichever is less. When no aviation FCA is available within the deployed battle group, the Battle Group Commander has local extension authority. Extensions beyond local authority must have prior approval from appropriate ACC/TYCOM, or designated agent. SE suspected to be out of tolerance may not be extended and must be removed from service.

10.18.5.2 Extending an interval past the scheduled due date is a management decision to be exercised in cases where no other alternative is available. If calibration capability is available from the FCA, or like in-

cal items are available, interval extensions are not an option. Interval extensions are an interim, short-term resolution to a maintenance problem, not a permanent fix. As soon as possible after the operational requirement has been satisfied or calibration capability becomes available, submit the extended SE for calibration per current scheduling instructions.

10.18.5.3 A SPECIAL CALIBRATION (NAVSEA 4734/15) label shall be placed next to, but not over, the expired calibration label of each extended asset. The special calibration label shall cite the written authority, such as the Maintenance Officer letter, authorizing the extension. Written authorization letters, using the format in [paragraph 10.18.5.5](#) shall be maintained on file in the cal lab for a minimum of 2 years. As soon as operational requirements are satisfied, extended SE shall be scheduled for calibration.

10.18.5.4 Safety related SE shall be designated on the MEASURE inventory with a pound sign (#) as the last character in the subcustodian field (block 6 of METER Card (OPNAV 4790/58)). There is no definitive list of safety related SE. Safety determination is an interpretation based on facts about a particular SE use which could adversely impact safety of flight or personnel safety. An item used for aircraft support might impact safety, but when used for a different function may not.

10.18.5.5 Extension requests for SE affecting safety of flight or personnel safety shall be submitted to the TYCOM (or COMFAIRWESTPAC if operating in WESTPAC) in the following format:

- a. Part number.
- b. Serial number.
- c. Nomenclature.
- d. Next due date.
- e. Extension term requested.
- f. Aircraft/ship systems supported.
- g. Number and status of like items on hand (all assets that perform same maintenance function). Include location. Otherwise, state "None."
- h. Safety certification (whether or not safety related when used in that particular application).
- i. Asset condition statement. Indicate any significant maintenance since last calibration.
- j. Justification/remarks (why interval extension is required). Describe any additional particulars involved.

10.18.5.6 Calibration interval extension request for radiac equipment shall be forwarded to COMNAVSEASYS COM (Code 04R) via NAVSEA Detachment Radiological Affairs Support Office Yorktown, VA (Code 02) for consideration, on a case-by-case basis, per NAVSEA SE700-AA-MAN-100. Send information copies to ACC/TYCOM (COMFAIRWESTPAC (Code N422) if operating in WESTPAC).

10.18.5.7 Interval changes issued by TYCOMs or the monthly NWS MSD Corona, CA Metrology Bulletin (METBUL) shall be implemented upon receipt. Indicate new intervals by placing a SPECIAL CALIBRATION (NAVSEA 4734/15) label next to, but not over, the current calibration label and cite the METBUL, by month and year of publication, as the authority document, via METER Card (OPNAV 4790/58), by rescheduling the due date. If any SE intervals are shortened to the point where they become

overdue, the SE shall be recalled within 30 days of notification, calibrated, and placed in service with new interval.

10.18.6 Embedded Calibration Standards

10.18.6.1 Calibration standards embedded within ATE are maintained by two Atlantic area and two Pacific area D-level calibration sites. They are designated as embedded calibration pool sites. Available items have been retrieved from the Supply System and dispersed equally. This equipment is now under the cognizance of the METCAL Program; therefore, should not be requisitioned from any retrograde turned in to the Supply System. Initial issue will be provided as part of the delivered ATE. The following items are identified as embedded calibration standards:

NIIN	Nomenclature	ATE System	Part Number	Qty
01-222-5244	BB80	HTS	0017819-01	5
01-223-4091	BB80	ATS(V)1	51530000-001	5
01-224-1897	*BB93	ATS(V)2	470AS93-200-001	5
01-323-3322	*BB93-2	ATS(V)2	470AS93-200-002	5
01-220-4521	RUBIDIUM OSC	RADCOM	FRTGRLA/A31U29151-13	5

NOTE: Do not turn embedded standards into the Supply System. Remove cabinet rails prior to shipping replaced embedded standards back to the embedded pool site. (BB93 and BB93-2 require both power sensors for repair or calibration.)

10.18.6.2 Responsibilities and Exchange Procedures

a. Customer. Thirty days prior to calibration due date expiration, the ISSC METCAL PST shall send a message to the supporting pool site with an information copy to the appropriate TYCOM. Request the embedded standard by NIIN and identify the exchange asset serial number. Upon receipt of replacement standard, ship the retrograde, ensuring that it is complete, to the sending pool site. Should an embedded standard fail, advise the supporting pool site an immediate replacement is required. To facilitate local due date tracking, report the embedded standard on Inventory Format 310 with a scheduled laboratory code of the supporting pool site. Update serial number and due date for each asset received.

b. Pool Sites. Maintain a separate MEASURE inventory of in-use and unused pool assets. Use subcustodian to indicate FCA code of issued items. Advise TYCOM of pool shortages, retrograde assets received in unusable condition, repair estimates beyond economical repair, or recommendations for changes in pool allowances. When notified, calibrate a replacement standard and forward it to the customer.

(1) Pacific area pool sites:

COMMANDING OFFICER
NAVAL AIR DEPOT
CODE 96500 (LABOPS)
PO BOX 357058
SAN DIEGO CA 92135-7058

US NAVY CALIBRATION LABORATORY
PSC 561 PO BOX 73114
FPO AP 96310-3114

(2) Atlantic area pool sites:

COMMANDING OFFICER
MID ATLANTIC REGIONAL CALIBRATION CENTER

BLDG V-61
9349 FOURTH AVE
NORFOLK VA 23511-2116

COMMANDING OFFICER
ATTN: AVIONICS BLDG 101U (CODE 63442)
NAVAL AIR DEPOT
NAS JACKSONVILLE, FL 32212-0016

10.18.7 D-Level Metrology and Calibration (METCAL) Program Workload

10.18.7.1 METCAL is budgeted, funded, and managed as subprograms 10, 11, 12, and 20 under the Aircraft Support Services Program (04). COMNAVAIRSYSCOM (AIR-6.7.6.3) is responsible for promulgating policy, budgeting and allocating funds, establishing procedures, ensuring pre-engineered parametric capabilities, and managing and performing operations.

10.18.7.2 METCAL tasks for calibratable SE, PME, and TMDE are treated as on-condition PM tasks by RCM and as such are determined in the same manner as on-condition tasks. MEASURE provides management information and data required to execute the COMNAVAIRSYSCOM METCAL Program, for example, control of calibration laboratory man-hour expenditures regardless of the location of the PME/TMDE and monitoring compliance with those schedules.

10.18.7.3 METCAL Workload Description. Primarily, the accomplishment of calibration and incidental repair of PME/TMDE used to perform O-level and I-level maintenance functions by the operating forces. This has direct application to all D-level laboratories with traceability and engineering support by NPSL. They include:

- a. Repairing and calibrating metrology calibration standards received from COMNAVAIRSYSCOM FCA laboratories and activities.
- b. Performing incidental repair and calibration services for:
 - (1) COMNAVSEASYSYSCOM and COMSPAWARSYSCOM.
 - (2) Other DOD and government agencies.
 - (3) Commercial contractors working under government contracts.
 - (4) In-house equipment (that requires calibration) within the laboratory's capability (not recalled or scheduled by COMNAVAIRSYSCOM (AIR-6.7)).
- c. Providing specialized calibration training on the theory and use of specific items of equipment for other Navy standards and calibration laboratory personnel.
- d. Preparing Local Calibration Procedures for unsupported calibration standards.
- e. Assisting COMNAVAIRSYSCOM (AIR-6.7) in the inspections and surveys of calibration facilities.
- f. Providing pickup and delivery service, transporting PME/TMDE and standards between custodians (customers) and COMNAVAIRSYSCOM calibration laboratories, as directed by COMNAVAIRSYSCOM (AIR-6.7), using government owned or commercial vehicles. The vehicle used for this service will be specially equipped with shock absorbing racks, shelves, and tie down devices designed for bolt-in installation.

- g. Performing additional tasks assigned by COMNAVAIRSYSCOM (AIR-6.7).

10.18.7.4 METCAL Workload Requirements. D-level METCAL scheduling program requirements are developed by COMNAVAIRSYSCOM (AIR-6.7.6.3).

10.18.7.4.1 Metrology Calibration Standards:

- a. The inventory of laboratory standards and equipment used to perform calibration functions must be adjusted as new PME/TMDE are brought into operational environments. Requirements for new or additional standards must be identified and requested. Requests are submitted to COMNAVAIRSYSCOM (AIR-6.7.6.3)

- b. Standards requiring National Institute of Standards and Technology (NIST) servicing will be forwarded to the NIST via NPSL.

10.18.7.4.2 In-house Assets. Workload generated by in-house calibratable assets must be included in requirements projections.

10.18.7.5 METCAL Workload Specifications. Work specifications are applicable in the following general areas and have direct application to D-level laboratories, including NPSL:

- a. Metrology standards and equipment used to perform calibration functions must be current, that is, in calibration, and all measurements traceable to standards maintained by the NIST and the USNO. To provide this assurance, a complete and current inventory of standards, regardless of cost or source, will be maintained under the MEASURE system. The MEASURE system will be used to control these inventory assets and as the repository for respective inventory listings.

- b. Calibration laboratory operations shall be technically adequate to provide the quality required by COMNAVAIRSYSCOM customers. The NA17-35QAC-01A is the primary basis for ensuring the technical adequacy of COMNAVAIRSYSCOM calibration laboratories; along with the proper use of existing COMNAVAIRSYSCOM METCAL engineering and support elements.

- c. Technicians must be qualified to perform the calibration functions expected of them and for which the laboratory has responsibility to perform per NA17-35POP-01.


- d. Calibration Procedures. Approved calibration procedures for calibration standards and PME/TMDE are specified in the Metrology Requirements List (NAVAIR 17-35MTL-1). As prescribed by COMNAVAIRSYSCOM instructions, assistance for procurement of calibration technical data and procedures is available from COMNAVAIRSYSCOM (AIR-6.7.6.3). Pending approval, interim local calibration procedures may be prepared and authorized by metrology engineering staff. The METCAL ISSC shall prepare or concur with any local calibration procedures required for fleet assets. The originator of the local calibration procedure shall actively follow-up for final approval and incorporation into NAVAIR 17-35MTL-1.

10.18.7.6 METCAL Workload Scheduling

10.18.7.6.1 The recall of equipment for calibration, at established intervals, is facilitated by MEASURE. MEASURE provides management information and data required to make recall schedules. COMNAVAIRSYSCOM (AIR-6.8.4.1) will publish and monitor equipment recall schedules and COMNAVAIRSYSCOM (AIR-6.7.6.3) will allocate resources required to execute the schedules. These schedules determine workload composition, authorizing MEASURE customers to forward specific equipment to the laboratories indicated for calibration.

10.18.7.6.2 D-level laboratories provide calibration and repair of the PME/TMDE and FCA standard workloads. NPSL workloads will be more oriented towards engineering support and traceability.

10.18.7.6.3 Most equipment is calibrated in the laboratory, but some must be done on-site by field teams (normally from D-level laboratories). All workloads will be scheduled or authorized by COMNAVAIR-SYSCOM (AIR-6.7.6.3).


* GPO - 1991 - 506 - 049

SPECIAL CALIBRATION


SERVICING ACTIVITY	MANUFACTURER
DATE	MODEL
SUBMITTING ACTIVITY	SERIAL

REASON

USE REVERSE SIDE IF REQUIRED


NAVSEA FORM 4734/6 (3/90) S/N 0116 - LF - 009 - 4500

**BLACK ON YELLOW
FORM NO 4734/6**


CALIBRATED
NAVY
METCAL
PROGRAM

SER. NO. _____
DATE _____
DUE _____

**BLACK ON WHITE
FORM NO 4734/8**



REJECTED

SERVICING ACTIVITY	MANUFACTURER
DATE	MODEL
SUBMITTING ACTIVITY	SERIAL

REASON

USE REVERSE SIDE IF REQUIRED

SUGGESTED CORRECTIVE ACTION

USE REVERSE SIDE IF REQUIRED

NAVSEA 4734/7 (3/90) S/N 0116 - LF - 009 - 4600


U.S. GPO:1994 507 - 647

**BLACK ON RED
FORM NO 4734/7**


Figure 10.18-1: Navy METCAL Program Labels and Tags

NAVY METCAL PROGRAM
CALIBRATED
SER. NO. _____
DATE _____
DUE _____


**BLACK ON WHITE
FORM NO 4734/10
WITH FLAP
FORM NO 4734/9**

 **CALIBRATED**
REFER TO
REPORT OF
CALIBRATION
NAVY
METCAL
PROGRAM
DATE _____
DUE _____

**RED ON WHITE
FORM NO 4734/13**


 **SPECIAL
CALIBRATION**
NAVY
METCAL
PROGRAM
SER. NO. _____
DATE _____
DUE _____
REASON:

**BLACK ON YELLOW
FORM NO 4734/15**

 **SPECIAL
CALIBRATION**
NAVY
METCAL
PROGRAM
REFER TO
ATTACHED
TAG
DATE: _____
DUE _____

**BLACK ON YELLOW
FORM NO 4734/16**

Figure 10.18-2: Navy METCAL Program Labels and Tags (continued)




INACTIVE

NAVY
METCAL
PROGRAM

CALIBRATE
BEFORE USE

DATE _____

**GREEN ON WHITE
FORM NO 4734/17**




REJECTED

NAVY
METCAL
PROGRAM

REFER TO
ATTACHED
TAG

DATE _____

**BLACK ON RED
FORM NO. 4734/18**



**USER
CALIBRATION**

NAVY
METCAL
PROGRAM


☐ CALIB. EACH USE

☐ CALIB. EVERY _____

☐ OTHER _____

LOG ACTION _____

**BLACK ON WHITE
FORM NO 4734/19**



NAVY METCAL PROGRAM

WARNING

CLEANED FOR OXYGEN
SERVICE

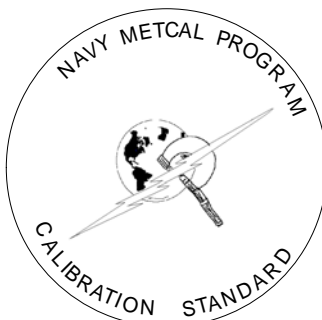
THIS DEVICE HAS BEEN
CLEANED & IS READY FOR
USE IN OXYGEN SYSTEMS.

DO NOT OPEN UNTIL
READY FOR USE


DATE _____

BY _____

**BLACK ON GREEN
FORM NO. 4734/20**



**BLACK ON BLUE
FORM NO 4734/22**



NAVY METCAL PROGRAM

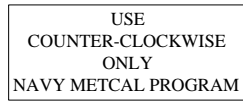
CLEANED
FOR OXYGEN SERVICE

DATE _____

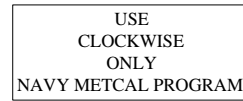
BY _____

**BLACK ON LT. GREEN
FORM NO 4734/23**

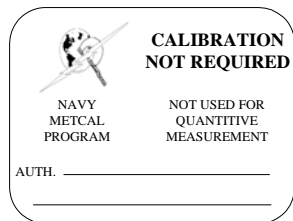
Figure 10.18-3: Navy METCAL Program Labels and Tags (continued)



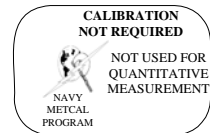
RED ON WHITE
FORM NO. 4734/24



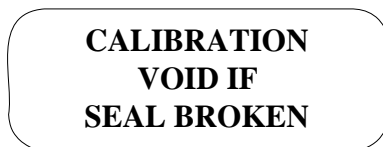
RED ON WHITE
FORM NO. 4734/25



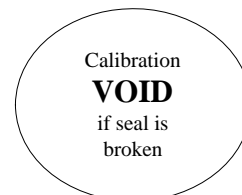
ORANGE ON WHITE
FORM NO. 4734/26



ORANGE ON WHITE
FORM NO 4734/27



BLACK ON WHITE
FORM NO 4734/28



BLACK ON WHITE
FORM NO 4734/29

Figure 10.18-4: Navy METCAL Program Labels and Tags (continued)

TITLE	NAVSEA FORM NO.	COLOR	SIZE (Inches)
<u>LABELS</u>			
CALIBRATED	4734/8	Black on White	1-3/8 x 1-1/8
CALIBRATED (With Flap)	4734/9	Black on White	1-3/8 x 1-1/8
CALIBRATED	4734/10	Black on White	7/8 x 5/8
CALIBRATED	4734/11	Black on White	5/8 x 3/8
CALIBRATED	4734/13	Red on White	7/8 x 5/8
SPECIAL CALIBRATION	4734/15	Black on Yellow	2 x 3
SPECIAL CALIBRATION	4734/16	Black on Yellow	7/8 x 5/8
*INACTIVE	4734/17	Green on White	1-3/8 x 1-1/8
REJECTED	4734/18	Black on Red	1-3/8 x 1-1/8
*USER CALIBRATION	4734/19	Black on White	1-1/4 x 1-7/16
WARNING - CLEANED FOR OXYGEN SERVICE	4734/20	Black on Green	2 x 3
CALIBRATION STANDARD	4734/22	Black on Blue	11/16 dia (round)
CLEANED FOR OXYGEN SERVICE	4734/23	Black on Lt Green	1 x 3/4 (oval)
USE COUNTER - CLOCKWISE ONLY	4734/24	Red on White	1/2 x 1
USE CLOCKWISE ONLY	4734/25	Red on White	1/2 x 1
*CALIBRATION NOT REQUIRED	4734/26	Orange on White	1-3/8 x 1-1/8
CALIBRATION NOT REQUIRED	4734/27	Orange on White	7/8 x 5/8
CALIBRATION VOID IF SEAL BROKEN	4734/28	Black on White	2 x 11/16
CALIBRATION VOID IF SEAL IS BROKEN	4734/29	Black on White	3/4 dia (round)
<u>TAGS</u>			
SPECIAL CALIBRATION	4734/6	Black on Yellow	3-1/8 x 4-1/4
REJECTED	4734/7	Black on Red	3-1/8 x 6-1/4

*** Only labels and tags authorized for TMDE custodians.**

Figure 10.18-5: Navy METCAL Program Labels and Tags (continued)

METCAL Program Invoice

FROM:			INVOICE NO:		
TO:			LOCATION:		
AUTHORIZATION (Officers Name, Rank, Signature)			PHONE OR EXT. NO.	JOB NO: (Not For FCA USE)	
			DATE	ACCOUNTING	
ITEM NO.	MODEL OR PART NUMBER	SERIAL NUMBER	NOMENCLATURE	DATE IN	DATE OUT
RECEIVED			DATE	BY (SIGNATURE)	

Figure 10.18-6: METCAL Program Invoice (Sample)

SUPPORT EQUIPMENT DISCREPANCY REPORT

Date: _____

From: _____

To: Work Center 670/Field Calibration Activity

Subj: REPAIR OF SUPPORT EQUIPMENT (SE)

1. Request repair of the following SE:

Model Number _____

Serial Number _____

Nomenclature _____

2. Describe the malfunction in detail:

Technician noting discrepancy

Phone Number

Work Center Supervisor

Figure 10.18-7: Support Equipment Discrepancy Report (Sample)

10.19 Hazardous Material Control and Management (HMC&M) Program (NAMPSOP)

10.19.1 Introduction

10.19.1.1 The Hazardous Material Control and Management Program establishes policy, procedures, responsibilities, and requirements for the safe use, handling, and disposal of HAZMAT.

10.19.1.2 References:

- a. OPNAVINST 5090.1, Environmental and Natural Resources Program Manual.
- b. NAVSUP Publication 722, Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) Manual.
- c. OPNAVINST 5100.19, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat.
- d. OPNAVINST 5100.23, Navy Occupational Safety and Health (NAVOSH) Program Manual.

10.19.2 Discussion

10.19.2.1 HMC&M applies to all Navy, Marine Corps, and other government activities performing maintenance or other functions in support of naval aviation. To ensure safe use of HAZMAT, the Navy has adopted the "cradle to grave" concept in which HAZMAT is closely managed throughout its life cycle, from acquisition to use and eventual disposal. HAZMAT management, control, and minimization serves to protect personnel and preserve the environment.

10.19.2.2 The term HAZMAT in this chapter includes materials that may not normally be considered HAZMAT. For example, plastics negatively impact ocean environment. Specific international environmental treaties and laws apply to plastics discharged into the sea. Each command shall consider all disposal actions that may affect the environment and act accordingly. OPNAVINST 5090.1 provides guidelines for HAZMAT disposal.

10.19.2.3 The LMTC responsible for HMC&M is CECIL COMMERCE CENTER, 6201 CARGO HOLD AVE, BLDG 1821 RM 217, JACKSONVILLE FL 32221.

10.19.2.4 Aircraft maintenance departments must place special emphasis on the HMC&M Program and fully support all federal, state, and local environmental laws and regulations concerning HAZMAT handling, storage, use, reuse, minimization, and disposal. Failure to comply with these regulations could result in civil or criminal liability.

10.19.2.5 The **R** Hazardous Material Information Resource System provides MSDSs containing health, safety, and environmental information about specific products. MSDSs, along with adequate training in proper use of products, assist users in managing HAZMAT to minimize risks involved in performing various maintenance actions. HMIS also provides labeling and packaging requirements, shipping and storage handling safety precautions, and other information.

NOTE: **D**_____.

10.19.2.6 Integral to HMC&M is CHRIMP, defined in NAVSUP Publication 722 and mandated by OPNAVINST 5100.23 and CNO 011810Z May 1995. The controlling arm of the CHRIMP concept is the ship and station HAZMINCEN, designed to be the only source for work centers to acquire HAZMAT. The HAZMINCEN controls and manages HAZMAT by using either the **R** Hazardous Inventory Control System Windows afloat or Regional Hazardous Inventory Control System ashore.

10.19.2.7 NAVICP Mechanicsburg, PA coordinates HAZMAT substitutions generated from SHML Feedback Reports. Requests are forwarded to appropriate COMNAVAIRSYSCOM and COMNAV-SEASYSYSCOM POCs for processing. Issues related to HMC&M under CHRIMP should be referred to COMNAVSUPSYSCOM (Code 424).

10.19.2.8 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.19.3 Responsibilities

10.19.3.1 The CO shall:

a. Designate, in writing, an officer/FRC equivalent civilian as the **R} Command** HMC&M Program Manager.

NOTE: Helicopter mine countermeasures squadrons will use the same HMC&M Program Manager and Supervisor for Aircraft Maintenance and Airborne Mine Countermeasures Maintenance Department.

b. Maintain close liaison with the host station environmental office or ship HAZMAT and HAZWASTE Coordinator on all environmental issues.

c. Ensure command adheres to CHRIMP requirements and acquires all HAZMAT through the installation's HAZMINCEN.

10.19.3.2 The MO shall:

a. Nominate, to the CO, an officer as the Maintenance Department HMC&M Program Manager.

b. Develop local command procedures (as required) per [Appendix D](#). Include written emergency procedures to contain, control, and resolve HAZMAT spills.

c. Designate, in writing via the MMP/SME listing, a department HMC&M Supervisor (E-5 or above).

d. Gain adequate familiarity, through local ship/station environmental office, with applicable DOD and local environmental, HAZMAT and HAZWASTE laws, rules, regulations, and procedures pertaining to the Maintenance Department.

10.19.3.3 The Program Manager shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Ensure an aggressive program of environmental awareness and compliance within the **R} Command**. Recognize a CO's potential personal liability for infractions and bring to the CO's immediate attention any potential violations or concerns that may impact achieving 100 percent compliance.

b. **R} Assist in** identifying and resolving any potential or actual environmental compliance, HAZMAT, or HAZWASTE related problems. Keep the chain of command informed of any violations or noncompliance issues.

c. Supervise and coordinate the HMC&M Program to ensure compliance with OPNAVINST 5090.1, OPNAVINST 5100.19 and OPNAVINST 5100.23, NAVSUP Publication 722, all applicable federal, state, and local regulations, and this instruction.

d. Develop Maintenance Department emergency spill procedures, per [Appendix D](#), to contain, control, and resolve HAZMAT spills, and submit to the host station environmental office or ship HAZMAT and HAZWASTE Coordinator for incorporation into the Pollution Prevention Plan. The station and ship Pollution Prevention Plan shall be reviewed and updated annually.

e. Maintain close liaison with the ship or station Environmental Office and Legal Department in all environmental issues.

f. Screen all required environmental reports and records.

g. Review CSEC audits and reports to aid in the assessment of the HMC&M Program.

h. Nominate, to the MO, an E-5 (or above) as HMC&M Supervisor.

i. When ashore, ensure all materials used are listed in AUL, and are properly handled. Submit recommended AUL changes, via the ACC/TYCOM, to COMNAVAIRSYSCOM (AIR-6.7.1.4). When afloat, ensure all materials used are listed in the SHML and are properly handled. Submit recommended SHML **R** feedback report changes via the ship's HAZMAT Coordinator and the ACC/TYCOM. The ACC/TYCOM will forward the request to NAVICP-M for review.

j. Coordinate with **R** the ship 6 months prior to deployment and station HAZMINCEN to establish HAZMAT requirements and assure product availability during all shifts.

jA. **A** Coordinate with station HAZMINCEN 3 months prior to detachment to establish HAZMAT requirements and assure product availability and local storage and handling information requirements.

k. Establish a departmental HAZMAT Control Committee. Select members and assign responsibilities per OPNAVINST 5100.23.

l. Fully use the CHRIMP facility once established by the host ship or station.

m. **A** Attend the Introduction to Hazardous Materials course (Course A-493-0031), within 60 days of assignment and hold this position for a minimum of 12 months.

10.19.3.4 The HMC&M Supervisor shall:

a. Attend the HMC&M Technician course (Course A-322-2600/2601) or equivalent (as determined or approved by Echelon 2 Headquarters), within 120 days of assignment and hold this position a minimum of 2 years. For sea-going commands, there are no substitute or equivalent courses currently available. For shore commands, the following are considered equivalent to the HMC&M Technician course (Course A-322-2600/2601).

(1) Introduction to Hazardous Material (Ashore) course (Course A-493-0031).

(2) Defense Hazardous Material/Hazardous Waste Handling course (Course ALMC-HA) provided by Army Logistic Management College and approved by Inter-Service Environmental Review Board.

NOTE: This assignment shall not be a collateral duty in those activities that have an OPNAV 1000/2 established billet.

b. Maintain a program file to include:

(1) Applicable POCs, for example, **A** AMMT Inspector, Wing Inspector, HAZMINCEN Supervisor, Industrial Hygienist, Safety Officer, and Environmental Officer.

(2) Active list of AUL and SHML used R} within the Command. This document shall include NSN or NIIN, Nomenclature, MIL SPEC, T/M/S, and estimated yearly usage.

(3) Program related correspondence and message traffic.

(4) Applicable references or cross reference locator sheets.

c. Maintain an up-to-date library of MSDS, either through the R} Hazardous Material Information Resource System or the HAZMINCEN, of all HAZMAT used within the command. Ensure an MSDS for each HAZMAT used is available at a centralized location within the activity. Obtain and keep on file MSDS not included in the Hazardous Material Information Resource System.

d. Ensure only materials listed in the AUL are available and properly labeled, handled, and used. Forward AUL change recommendations via the appropriate ACC/TYCOM to COMNAVAIRSYSCOM (AIR-6.7.1) when ashore. When afloat, materials listed in the AUL must also be listed in the SHML to be available in the HAZMINCEN. Forward SHML change recommendations to NAVICP via the ship R} HAZMAT Coordinator and appropriate ACC/TYCOM.

e. Assist in maintaining an aggressive program of environmental awareness and compliance throughout the Maintenance Department. Recognize the CO's potential personal liability for infractions. Keep the chain of command informed of any concerns or possible violations and assist in correcting any occurrences.

f. Conduct meetings with all work center supervisors or their designated HMC&M Petty Officers at least monthly (more often if required) to discuss HMC&M implementation, review procedures, and disseminate new regulations and requirements.

g. Ensure all work center supervisors and their designated HMC&M Petty Officers have completed formal or local HAZMAT storage and handling training within 30 days of assignment.

NOTE: A} Formal HAZMAT storage and handling training is provided by the station HAZMINCEN. Local training curricula will be provided by the HMC&M supervisor and shall be tailored to include State and local HW laws and regulations.

h. Provide liaison between the Supply and Maintenance Departments for monitoring HAZMAT procurement.

NOTE: **Stockpiling of HAZMAT is not consistent with the goals of the HMC&M Program and shall be avoided.**

i. Control Maintenance Department storage facilities and HAZWASTE collection points and ensure compliance with OPNAVINST 5090.1 and established ship or shore requirements. Ensure all flammables are stored in an approved flammable storage locker.

j. Ensure work center supervisors maintain Uniform HAZWASTE Manifests and other required documents per OPNAVINST 5090.1.

k. Screen all required environmental reports and records.

l. Assist QA in screening all R} DRs dealing with environmental issues to ensure they are accurate, clear, concise, and comprehensive.

NOTE: **Conflicts may arise with existing technical publications, TDs, and procedures caused by rapidly changing HAZMAT and HAZWASTE environmental compliance regulations. Conflicts should be reported to the ISSC/LMTC on an environmental report, HMR, EI, or TPDR, with**

COMNAVAIRSYSCOM (AIR-6.7.1.4 and 4.3.4P) and ACC/TYCOM as information addressees.

- m. Review recommended changes to the AUL and SHML or procedural changes that effect the HMC&M Program.
- n. Fully use the CHRIMP facility once established by the host ship or station.
- o. Review and recommend, via QA, any material or process changes that may need ISSC/LMTC or ACC/TYCOM attention for approval.
- p. Ensure effective shelf life processes are in effect for R} RFI HAZMAT.
- q. Maintain a HAZMAT log to identify material issued, used, retained for reuse, and disposed of as HAZWASTE.
- r. A} Conduct emergency spill drill, at a minimum quarterly.

10.19.3.5 The QA Officer shall designate, in writing via the MMP/SME listing, a QAR/QA Specialist as the HMC&M Program Monitor. This designation does not prevent other QARs/QA specialists from monitoring the program but places overall responsibility with one individual.

10.19.3.6 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Assist work centers in preparing environmental and R} DRs.
- c. Verify only HAZMAT with current shelf life is used.
- d. Verify all HAZMAT is containerized, properly labeled, and stored per OPNAVINST 5090.1, OPNAVINST 5100.23, and OPNAVINST 5100.19.

10.19.3.7 Division officers shall:

- a. Ensure all HAZMAT from aircraft, SE, and related maintenance actions is properly handled, collected, and disposed of per all applicable federal, state, and local regulations, and this instruction.
- b. Designate, in writing, work center HMC&M Petty Officers.
- c. Gain adequate familiarity, through local ship/station environmental office, with applicable DOD and local environmental, HAZMAT, and HAZWASTE laws, rules, regulations, and procedures pertaining to the division.
- d. Ensure an aggressive program of environmental awareness and compliance is maintained within the R} division. Recognize the CO's potential personal liability for infractions and bring to the CO's immediate attention any potential violations or concerns that may impact the command's ability to achieve 100 percent compliance.

10.19.3.8 Work center supervisors shall:

- a. Ensure Hazardous Material Control and Management Program and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.

b. Ensure all personnel receive command HMC&M and hazardous communications training per OPNAVINST 5100.19 and OPNAVINST 5100.23 within 30 days of assignment.

c. Review work center AUL and SHML annually and route change recommendations through the HMC&M Supervisor per OPNAVINST 5090.1.

d. **R}** Ensure personnel directly involved in the handling and use of the material have received job specific training per OPNAVINST 5100.19 and OPNAVINST 5100.23.

NOTE: **A}** **MSDS training shall be conducted and documented using Figure 10.19-1 prior to personnel contacting HAZMAT. Individuals shall sign and date all appropriate blocks. Collective entry is not authorized. MSDS training documentation will be retained for 5 years.**

e. Use an effective shelf life process for all work center HAZMAT.

f. Maintain complete and accurately prepared HAZMAT logs to identify material issued, used, retained for reuse, and disposed of as HAZWASTE (I-level only).

NOTE: **In sites where a CHRIMP has been established by the host ship or station, work center supervisors should use the CHRIMP computer-generated reports to satisfy the requirements of paragraphs 10.19.3.8e and 10.19.3f above.**

g. Provide the HMC&M Supervisor with updated lists of HAZMAT in the work center. Forward all material substitutions and process changes.

h. Allow workers to only use HAZMAT acquired from the HAZMINCEN (nothing borrowed from another source).

i. Recommend qualified personnel for designation as HMC&M Petty Officers.

10.19.3.9 HMC&M Petty Officers shall:

a. Assist the Work Center Supervisor in all matters related to HMC&M in the work center.

b. Attend all Maintenance Department/Division HMC&M meetings.

c. Maintain an inventory of all HAZMAT present in the work center and ensure current shelf life has not expired.

d. Maintain an accurate AUL for the work center.

f. Maintain an adequate supply of containers, labels, spill response material, and related items in the work center.

g. Ensure a weekly inspection of work center HAZMAT and HAZWASTE sites is accomplished and maintain a record of all inspections **A}** **for a minimum of 1 year.**

h. Ensure all HAZMAT and HAZWASTE containers are properly labeled, segregated, and free of corrosion and leakage.

i. Contact the Maintenance Department HMC&M Supervisor when collection drums are full.

j. Maintain a profile log for each container of HAZWASTE.

k. Prepare necessary documentation for each container of HAZWASTE.

l. Notify the Maintenance Department HMC&M Supervisor prior to establishing new HAZWASTE streams or HAZWASTE collection points.

Comm and: _____

Work Center: _____

Member (Printed):

10-264A

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10.20 Individual Component Repair List (ICRL) Program (NAMPSOP)

10.20.1 Introduction

10.20.1.1 The ICRL Program establishes policy, responsibilities, and requirements for local repair capabilities of the IMA.

10.20.1.2 Reference. NAVSUP Publication 719, Guide for the Assignment, Application and Use of Source, Maintenance and Recoverability Codes.

10.20.2 Discussion

10.20.2.1 The ICRL is a management tool which provides an IMA with the ability to relate its maintenance capability to individual items. The ICRL indicates if local repair capability exists for components inducted into the AMSU for repair, check, or test and identifies the work center with that capability. An ICRL shall have, as its focus, a listing of aircraft components supported by the IMA. End items should not be listed in an activity's ICRL. Work centers that only perform inspections, such as 530, and work centers that only repair end items, such as 731 and 910, would not normally have an ICRL. The ICRL provides:

- a. Logic in NTCSS Optimized IMA NALCOMIS for expeditious induction of components for repair, or expeditious turnaround of components in AMSU back to supply for repair and return to FRCs and shore AIMD/MALS.

- b. AMSU contingency operations in the event of NALCOMIS system failure.

- c. A standard format to compare repair capability with other ICRLs.

10.20.2.2 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.20.2.3 The COMNAVAIRFOR combined web-based ICRL is available for download from the CNAF Extranet Aviation Warfare Portal (<https://extra.cnaf.navy.mil>).

10.20.3 Responsibilities

10.20.3.1 The MO shall:

- a. Establish and maintain an effective ICRL Program.

- b. Develop local command procedures (as required) per [Appendix D](#).

10.20.3.2 The Supply Officer shall:

- a. Assist the MO in maintaining a viable ICRL Program.

- b. Assist the MO in developing local command procedures.

- c. Assign, in writing, a Supply ICRL Program Representative.

10.20.3.3 The MMCO shall:

- a. Establish procedures to monitor component repair capabilities per this instruction.

- b. Designate, in writing via the MMP/SME listing, an ICRL Program Manager.

- c. Ensure all CCs assigned to components are accurate.

10.20.3.4 The Program Manager shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be responsible to the MMCO for the proper maintenance and use of the ICRL.
- b. Conduct training for all ICRL Petty Officers.
- c. Conduct quarterly ICRL review/training as follows:

- (1) Request two ICRL reports, by work center code, from the DBA and issue to work centers.
- (2) Assign a due date for work centers to complete their reviews.

(3) Direct work centers to annotate changes on both copies and forward one copy back to the ICRL Program Manager by the assigned due date. The other copy will be retained by the work center as the working copy.

(4) Verify SM&R codes, P/Ns, COGs, and NSNs using FEDLOG and web sites such as NAVICP (<https://www.navsup.navy.mil/navsup>), NALDA (<http://www.navair.navy.mil/logistics>), and WEBFLIS (<https://www.webflis.dlis.dla.mil>).

(5) After incorporating all valid changes, request new printouts and distribute copies to Production Control/AMSU and the Supply ICRL Program Representative. Distribute new copies to specific work centers upon request.

(6) Ensure all X2 CC requests are routed to the IMRL Manager or TCP Coordinator to obtain required equipment or tools, and all X6 CC requests are routed to the CTPL to obtain required technical data.

- (7) Ensure all X3 CC requests are routed to the MMCO and AMO.

- d. Verify all recommended ICRL Changes.

NOTE: **Ensure no SM&R code changes are made to the ICRL until official notification is received from NAVICP or COMNAVAIRSYSCOM.**

e. Retain all ICRL Change Requests (Figure 10.20-2) and other pertinent data on file until all changes have been incorporated.

- f. Ensure all ICRL Change Requests (Figure 10.20-2) are routed to applicable personnel.

g. Validate CCs X2, X3 and X6, TCCDT quarterly. Refer to ICRL Capability Codes (Figure 10.20-4) for CC description and required actions.

h. Process the ICRL Error Mailbox. As AMSU inducts components into the AIMD/MALS, various data elements from the MAF/VO are validated against the activity's ICRL. The W/C, WUC, TEC, CAGE and P/N blocks from the MAF/VO should agree with what is listed on an activity's ICRL. When these data elements do not agree, and the item is inducted into the work center, an ICRL Error Mailbox is created for the ICRL Manager. In many cases, the ICRL is correct and the MAF/VO is wrong, in this case the ICRL Error message can simply be deleted. When review of the ICRL Error message indicates the ICRL is incorrect, a new entry can easily be added to the ICRL. Review of this mailbox by the ICRL Manager normally provides training opportunities for work center and AMSU personnel.

- i. Use the COMNAVAIRFOR provided Combined ICRL (<https://extra.cnaf.navy.mil>) to:

(1) Locate the applicable work center to induct items that do not appear in the local ICRL. Locate the NIIN or CAGE/PN of ICRL entries at other similar type IMAs and determine if the same work center has repair capability.

(2) Compare repair capability of the local IMA to similar type IMAs, paying particular attention to the comparison of parts repaired at other IMAs that are loaded in the local ICRL as no repair authorized.

(3) Assist DCU personnel to determine repair and return opportunities.

10.20.3.5 The QA Officer shall designate, in writing via the MMP/SME listing, a QAR/QA Specialist as the ICRL Program Monitor. This assignment does not preclude other QARs/program specialists from monitoring this program but places the overall responsibility with one individual.

10.20.3.6 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Verify, sign, and date ICRL Change Request ([Figure 10.20-2](#)) prior to forwarding to the MMCO for review and approval.
- c. Be familiar with all ICRL data fields and contents. Additional emphasis is placed on knowledge and comprehension of SM&R codes defined in NAVSUP Publication 719.

10.20.3.7 The NALCOMIS DBA shall:

- a. Ensure only the ICRL Program Manager is issued the SMQ for incorporating ICRL changes.
- b. Semi-annually forward a DBAG-2L ICRL extract to the TYCOM for use in building the Navy-wide Combined ICRL. Details of data submission times and procedure are promulgated by COMNAVAIRFOR via naval message.

10.20.3.8 AMSU shall:

- a. Ensure each P/N inducted is identical to the P/N on the component identification plate. If the ID plate is missing, validate with the IPB (TRU/MAF originator). New P/Ns will be added to NALCOMIS by TRU.
- b. Ensure all components inducted into work centers are properly identified in the activity's ICRL.
- c. Verify P/N and CAGE code on the incoming component against the MAF and ICRL P/N and CAGE code entries. Accuracy of P/Ns is to include, but is not limited to, slashes and dashes to prevent duplication of P/Ns in the ICRL.
- d. Initiate an ICRL Change Request ([Figure 10.20-2](#)) for all P/Ns being inducted for the first time. Complete blocks 1 through 10 with the basic information and forward the form to the ICRL manager.
- e. Validate the X1 CC during BCM reviews and induct part to work center if review date has expired. The Local Use column shall include the BCM review date and work center responsible for review.
- f. Screen discrepancies against X1 CC items. Items with minor discrepancies, for example, broken/missing knobs or fasteners, shall be referred to Production Control for investigation of possible repair.

10.20.3.9 Material Control shall assist the ICRL Program Manager in training QARs, work center supervisors, and ICRL petty officers on the compatibility of repairable/consumable COGs with SM&R and CC documentation.

10.20.3.10 The Supply ICRL Program Representative shall:

- a. Review all ICRL Change Requests (Figure 10.20-2) for accuracy.
- b. Update temporary Navy item control numbers with permanent NSNs as they are issued by NAVICP.
- c. Assign a 1RL or 1RZ COG to all locally assigned NSNs.

10.20.3.11 Division officers shall:

- a. Designate Work Center ICRL petty officers using a Work Center ICRL Petty Officer Designation (Figure 10.20-1).
- b. Ensure each ICRL Petty Officer/NCO receives training from the ICRL Manager.
- c. Review applicable ICRL Change Requests (Figure 10.20-2) and forward valid requests to QA.

10.20.3.12 Work center supervisors shall:

- a. Ensure Individual Component Repair List Program and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Appendix D) in the individual's qualification/certification record.
- b. Nominate a knowledgeable candidate to the Division Officer for designation as ICRL Program Petty Officer.
- c. Review and validate the degree of repair capability assigned to each component.
- d. Ensure quarterly ICRL reviews are properly documented and completed before forwarding to the ICRL Program Manager.
- e. Use the ICRL Change Request (Figure 10.20-2) to request changes to the ICRL and provide justification for each request. Ensure applicable blocks 1 through 15 are completed accurately and forward to QA via the Division Officer. Block 11b is an anticipated repair capability for some future date, and differs from the current capability. TCC and CC are never the same. If no change in current capability is anticipated, TCC and TCCD shall remain blank.

10.20.3.13 Work Center ICRL Program Petty Officer/NCO shall:

- a. Be responsible for the accuracy and upkeep of the ICRL.
- b. Attend ICRL Program Manager training to become familiar with the fundamental data included in the ICRL.
- c. Research all items listed in the ICRL using applicable IPBs, FEDLOG, and web sites such as NAVICP (<https://www.navsup.navy.mil>) and WEBFLIS (<https://www.webflis.dlis.dla.mil>) to ensure all data entered is complete and accurate.
- d. Ensure quarterly ICRL reviews are completed by the due date assigned by the ICRL Program Manager.

e. Ensure all X2 and X6 CC have the required materials on order and provide documentation to the ICRL Program Manager.

10.20.4 Individual Component Repair List (ICRL) Data Field Descriptions

10.20.4.1 PART NO. Enter the P/N or other reference number (if the P/N is not available) of the end item being processed. P/N and reference number are hereafter referred to as P/N. Ensure all elements of a P/N are used, for example, dashes and slashes. Maintenance and Supply publications, Master Cross Reference List, FEDLOG, and websites such as NAVICP (<https://www.navsup.navy.mil>) or WEBFLIS (<https://www.webflis.dlis.dla.mil>) can be used for P/N, CAGE code, and NIIN cross referencing.

10.20.4.2 CAGE. Enter the CAGE code used with the P/N. A specific P/N may have multiple CAGE codes.

10.20.4.3 WUC. Enter the WUC (up to 32 alphanumeric characters) that identifies the P/N. A WUC with the 5th digit ending in 9 (NOC) shall only be used when no other WUC is applicable.

10.20.4.4 TEC. Enter the TEC applicable to the end item. A specific P/N may have multiple TECs.

10.20.4.5 SRC IND. Enter A, E, M, or S for those items requiring a history record or card. A = ASR/AESR, E = EHR Card, M = MSR, and S = SRC Card. Leave blank if no history record or card is required.

10.20.4.6 CC. Enter the CC which reflects the IMA's repair capability for the P/N. Refer to ICRL Capability Codes (Figure 10.20-3) for specific descriptions.

10.20.4.7 WC. Enter the work center designated as having repair or test and check capability.

10.20.4.8 SM&R. Enter the SM&R code for the specific P/N, CAGE code, and NIIN as identified by FEDLOG, NAVICP (<https://www.navsup.navy.mil>) or WEBFLIS (<https://www.webflis.dlis.dla.mil>). NAVSUP Publication 719 provides definition of SM&R code composition and identifies specific information for Supply and Maintenance personnel. Comparison of an SM&R code and the activity's CC may be the basis for requesting an SM&R code change.

10.20.4.9 Nomenclature. Enter a brief description of the item. It is recommended to use the same nomenclature as used by NAVICP FEDLOG, NAVICP (<https://www.navsup.navy.mil>) or WEBFLIS (<https://www.webflis.dlis.dla.mil>).

10.20.4.10 COG-MCC-FSC-NIIN-SMIC. Enter the COG, MCC, FSC, NIIN, and SMIC as identified by FEDLOG, NAVICP (<https://www.navsup.navy.mil>), or WEBFLIS (<https://www.webflis.dlis.dla.mil>).

10.20.4.11 FA. Not currently used in NALCOMIS. Will automatically be N.

10.20.4.12 TCC. Enter the IMA's anticipated repair CC. ICRL Capability Codes (Figure 10.20-3) defines CCs. ICRL Requirements for Target Capability Codes and Target Capability Code Dates (Figure 10.20-4) provide guidelines for assigning TCCs.

10.20.4.13 TCC DT. Enter the Julian date which approximates when the TCC will be achieved. ICRL Requirements for Target Capability Codes and Target Capability Code Dates (Figure 10.20-4) provide specific criteria.

10.20.4.14 ICRL UPDAT DT. Date is automatically updated when information is changed.

10.20.4.15 BC. Enter a locally assigned number to identify a test bench within a work center.

10.20.4.16 LOC IND. Currently not used in NALCOMIS, will always be Y.

10.20.4.17 Local Use. Entries in this column represent nonstandard data of significance only to the IMA on whose ICRL they appear, for example, to flag P/Ns which are Repair and Return to other IMAs, special notes, or to enter a repair capability based on use of the Huntron Tracker or Pin Point Program.

From: _____
Division Officer

To: _____
(Work Center ICRL Petty Officer/NCO)

Subj: WORK CENTER ICRL PETTY OFFICER/NCO DESIGNATION

Ref: (a) NAVSUP Publication 719
(b) COMNAVAIRFORINST 4790. 2

1. You are assigned as the Work Center _____ ICRL Petty Officer/NCO and shall perform your duties per references (a) and (b). Your duties will include but are not limited to the following:

- a. Be responsible for the proper upkeep of the work center ICRL.
- b. Attend training as directed by the ICRL Program Manager.
- c. Research all items listed in the ICRL using applicable IPBs, FEDLOG, and web sites, such as NAVICP (<https://www.navsup.navy.mil>) and WEBFLIS (<https://www.webflis.dlis.dla.mil>). to ensure all data entered is complete and accurate.
- d. Ensure quarterly ICRL reviews are complete by the due date assigned by the ICRL Program Manager.
- e. Ensure all items with capability codes X2 and X6 have the required materials on order and provide documentation to the Program Manager.

2. I certify that I have read and understand the responsibilities of the assigned billet and shall perform the duties to the best of my ability.

Assignee Signature

Date

Division Officer Signature

Date

Original to:
Individual's Qualification/Certification Record
Copy to: ICRL Program Manager

Figure 10.20-1: Work Center ICRL Petty Officer/NCO Designation

1. Date _____

2. Work Center: _____

3. a. Addition: _____ b. Change: _____ c. Delete: _____
(check one)

d. Reason: _____

4. Nomenclature: _____

5. NSN Data:

a. CAGE: _____ b. P/N: _____ c. NSN: _____

d. COG: _____ e. MCC: _____ f. SMIC: _____

g. FGC: _____ h. Repairable: _____ Consumable: _____
(check one)

6. WUC: _____

7. SM&R: _____

8. TEC: _____

9. a. ASR: _____ b. EHR: _____ c. MSR: _____ d. SCR: _____ e. AESR: _____
(check one)

10. a. TD Code: _____ b. TD No. _____

11. a. CC _____ b. TCC: _____ c. TCCDT: _____

12. a. (X6) Tech Data (Pub,TPI,TPD): _____ b. Doc No./MSG DTG (required): _____

13. a. (X2)IMRL revision needed (Y/N): _____ b. IMRL Line Item no. _____

c. IMRL Equipment P/N: _____ d. IMRL Petty Officer/NCO _____

NOTE: X2 CC requires IMRL Manager or TCP Coordinator to review for obtaining required equipment or Tools X6 CC requires Central Technical Publications Librarian to review for obtaining required technical data. Document number of message DTG must be furnished to the ICRL Manager.

14. a. NEC(s) (X3) _____

b. School Required (Y/N) _____ OJT Required (Y/N) _____

c. AMO Approve/Disapprove _____ Date: _____
(circle one)

15. Remarks: _____

16. Signatures (as applicable):

	_____	Date _____
Work Center ICRL Petty Officer/NCO	_____	_____
Work Center Supervisor	_____	_____
Division Officer	_____	_____
ICRL Program Manager/QAR	_____	_____
Central Technical Publications Librarian	_____	_____
AMSU	_____	_____
Supply ICRL Technical Research Unit	_____	_____
IMRL Manager (if applicable)	_____	_____
TCP Coordinator	_____	_____
Production Control Chief/NCO	_____	_____
Production Control Officer/MMCO	_____	_____

NOTE: To be retained on file by the ICRL Program Manager for at least 12 months to ensure all changes have been incorporated.

Figure 10.20-2: ICRL Change Request

ICRL CAPABILITY CODES

C1 - Full Repair. This code identifies items for which a normal range of failures can be completely repaired by the IMA per applicable directives, for example, Maintenance Plan; Source, Maintenance, and Recoverability (SM&R) codes; and Maintenance Instruction Manuals (MIMs).

C3 - Limited Repair. This code identifies items for which repair of the normal range of failures cannot be accomplished. However, repair to some extent beyond test and Ready For Issue (RFI) certification is performed.

A1 - Check and Test Only. This code identifies items which can be tested for range of common failures but cannot be repaired at the activity.

M1 - Assemble/Manufacture. This code identifies material which can be assembled or fabricated by the IMA.

R1 - Repair and Return to Originating Activity. This code identifies components that are automatically and routinely sent from one shore IMA to another shore IMA for repair and return. Examples are components sent repair and return from Naval Air Weapons Station China Lake Weapons Test Squadron IMA to NAS Lemoore AIMD and from NAS Pt Mugu AIMD to NAS Whidbey Island AIMD. The R1 capability code is NOT to be used in an afloat IMA's ICRL. This code can only be used with Work Center 05A.

X1 - Repair Not Authorized. This code indicates the activity is not authorized to repair the component. This code is equivalent to BCM 1 and indicates that I-level maintenance is not authorized to repair the component. May not be used for field level repairable equipment, for example, 1RD COG items. This code can only be used with Work Center 05A.

X2 - Lack of Authorized Equipment/Tools/Facilities. This code indicates authorized equipment, tools, or facilities are not available. This code must always be accompanied by a Target Capability Code (TCC) and a Target Capability Code Date (TCCDT).

X3 - Lack of Required Technical Skills. This code indicates required skills are not available. This code must always be accompanied with a TCC and a TCCDT.

X6 - Lack of Technical Data. This code indicates repair cannot be accomplished due to lack of maintenance manuals, drawings, test program disk/tape, test program instruction, etc., which describe detailed repair procedures and requirements. This code must always be accompanied by a TCC and a TCCDT.

Z1 - Consumable Material. This code identifies material assigned SM&R code with ZZ in the fourth and fifth positions or B in the fourth position for which a repair program has not been planned but a capability exists to repair a limited range of failures, or for which the IMA is capable of performing a servicing function, for example, flushing or cleaning.

D1 - Full D-Level Capability.

D3 - Partial D-Level Capability (used if a D-level artisan is in place at a site).

Figure 10.20-3: ICRL Capability Codes

**ICRL REQUIREMENTS FOR TARGET CAPABILITY CODES AND
TARGET CAPABILITY CODE DATES**

1. Target Capability Codes (TCCs) and Target Capability Code Dates (TCCDTs) apply only to the following capability codes:

X2 - Test equipment/special tools required to perform the maintenance on the component is not available. The Work Center Individual Component Repair List (ICRL) Petty Officer shall coordinate obtaining required equipment or tools with the Individual Material Readiness List (IMRL) Manager or Tool Control Program (TCP) Coordinator. Documentation to support the request for the equipment will be provided by the IMRL Manager by message to the Support Equipment Controlling Authority requesting the equipment, or a revision, be submitted to add it to the activity's IMRL. If the item is a special tool (nonIMRL), the TCP Coordinator shall provide a document number to the Work Center ICRL Petty Officer and ICRL Program Manager and provide status updates during the quarterly ICRL review until the tool is received.

X3 - Use when a specific Navy Enlisted Classification (NEC)/Military Occupational Specialty (MOS) is required. If the Enlisted Distribution Verification Report/Table of Organization is showing personnel with that NEC/MOS reporting in the future, or a technician has been slated to report to a school to acquire the NEC/MOS, the date the technician will become available from school will be the TCD.

X6 - When used, the Work Center ICRL Petty Officer shall place the required publication on order through the Central Technical Publications Library (CTPL), or required test program disk, test program medium, test program instruction, or test program set through the IMRL Manager. The document number or message DTG must be provided to the ICRL Program Manager when submitting changes during quarterly ICRL review.

2. TCCDTs shall not exceed 90 days and shall be reviewed and updated every quarter. During the quarterly ICRL review, each Work Center ICRL Program Petty Officer shall validate the X2 and X6 document numbers to ensure they are still valid and update as required.
3. When the equipment or technical data is received, the IMRL Manager, TCP Coordinator, or CTPL shall ensure the Work Center ICRL Program Petty Officer is notified so the ICRL changes can be submitted to the ICRL Program Manager.
4. The ICRL Program Manager shall update the ICRL as changes are received.

Figure 10.20-4: ICRL Requirements for Target Capability Codes and Target Capability Code Dates

10.21 Electromagnetic Interference (EMI)/Electrostatic Discharge (ESD) Program (NAMPSOP)

10.21.1 Introduction

10.21.1.1 The EMI/ESD Control Program establishes policy, responsibilities, and requirements for EMI prevention and reporting and the handling, transportation, storage, and maintenance of ESDS devices/components.

10.21.1.2 References:

- a. MIL-HDBK-263B, Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Initiated Explosive Devices) (Metric).
- b. MIL-STD-1686C, Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment.
- c. NAVAIR 01-1A-23, Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair.
- d. NAVSUP Publication 484, Supply Afloat Fleet and Field Packaging Procedures.
- e. NAVSUP Publication 700, Navy Packaging Data.
- f. NAVSUP Publication 723, Navy Inventory Integrity Procedures.
- g. NAVAIR 17-600-193-6-2, PRC-2000-2M System Maintenance Requirement Cards.
- h. MIL-HDBK-773, Electrostatic Discharge Protective Packaging.
- i. NAVAIR 00-80T-117, Electromagnetic Compatibility Theory and Practice Manual.
- j. NAVSEA OP 3565, Electromagnetic Radiation Hazards.
- k. OPNAVINST 2450.2, Electromagnetic Compatibility Program within the Department of the Navy.
- l. OPNAVINST 3750.6R, The Naval Aviation Safety Program.
- m. NAVAIRINST 2450.2, Electromagnetic Environmental Effects (E3) Control within the Naval Air Systems Command.
- n. A} NAVAIR 17-600-193-6-1, Preoperational Checklist, PRC-2000-2M System Electronic Rework Power Unit.

10.21.2 Discussion

10.21.2.1 Effects of the EME on complex electronic systems remain one of the least understood mission threatening problems confronting naval aviation today. EMI and ESD directly affect naval aviation weapons systems. The total sum of all radiated and conducted electromagnetic energy in a given area is the EME. As naval aircraft operate in this EME, these effects can become more pronounced as new systems employ increased emitter power, increased receiver sensitivity, smaller more susceptible solid-state devices/circuitry, and the increased use of composite materials in aircraft structures. These technical improvements can result in decreased combat readiness, increased mission aborts, increased maintenance man-hours per flight hour, and adverse impact on safety of flight.

10.21.2.2 Knowing the effects of ESD on solid state electronic components and equipment is a necessary part of aviation maintenance. Improper handling, transportation, and storage techniques can cause electrostatic sensitive devices and components to fail. The insidious nature of ESD induced failures require ESD control protection measures to be integral parts of aviation maintenance and supply disciplines. All solid state electronic components and assemblies containing such components are considered ESDS items unless otherwise directed by higher authority. These items include printed circuit board assemblies, modules, SRAs, WRAs, individual components, and integrated circuits.

10.21.2.3 OPNAVINST 2450.2, NAVAIRINST 2450.2, NAVAIR 00-80T-117, and NAVSEA OP 3565 provide guidance for implementing an EMI control program. MIL-HDBK-263B and MIL-STD-1686C provide policy and guidance for implementing an effective ESD Program. NAVAIR 01-1A-23 defines ESD control and protection requirements for 2M Electronic Assembly Repair. NAVSUP Publication 484 provides fleet supply afloat and field packaging procedures. NAVSUP Publication 723 contains SDR information. A} NAVAIR 17-600-193-6-1 provides a preoperational checklist for the PRC-10000-2M System Electronic Rework Power Unit. NAVAIR 17-600-193-6-2 addresses PM requirements for ESD protected work areas. MIL-HDBK-773 contains instructions for packaging ESDS circuit cards and modules for shipment and storage.

10.21.2.4 Personnel and aircrew safety cannot be overstressed in this program. EMI can cause degraded performance of mission critical systems that can result in damage to equipment and systems and even loss of an aircrew in extreme cases. Maintenance personnel must be aware of conditions that may lead to EMI incidents. ESD also poses a shock hazard to personnel, in addition to possible damage to SRAs/WRAs. In the past, technicians have been isolated from electrical shock by nonconductive rubber mats. In ESD protected work areas, these nonconductive mats have been replaced with conductive material/devices through which the technician is tied to a "soft ground" (a connection to ground through an impedance sufficiently high to limit current flow to safe levels for personnel (normally 5 milliamperes)). Impedance needed for soft ground is dependent upon the voltage levels which could be contacted by personnel near the ground. The practice of removing SRAs/WRAs with power applied is strictly prohibited.

10.21.2.5 COMNAVAIRSYSCOM (AIR-4.1.7) can provide ESD Program information.

10.21.2.6 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.21.3 Responsibilities; O-Level, IMA/FRC Activities

10.21.3.1 The MO/Production Officer shall:

- a. Develop local command procedures (as required) per [Appendix D](#).
- b. Designate, in writing via the MMP/SME listing, an EMI/ESD Program Manager/Coordinator.
- c. Ensure personnel are properly trained prior to handling ESDS items.
- d. Ensure personnel are properly trained in the prevention of EMI.

10.21.3.2 The Supply Officer shall:

- a. Develop local command procedures (as required)
- b. Designate, in writing, an EMI/ESD Program Coordinator.
- c. Ensure personnel are properly trained prior to handling ESDS items.
- d. Keep required ESDS protective materials in the local supply system for all levels of maintenance.

- e. Retain ESDS items in protective packaging while in pre-expended bins and other storage areas.
- f. Ensure ESDS items are properly packaged per MIL-HDBK-773 prior to shipment.

10.21.3.3 The Program Manager/Coordinator shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Be responsible to the MO, Production Officer, or Supply Officer for implementing the EMI/ESD Program and enforcing compliance.
- b. Ensure this instruction and MIL-HDBK-263B, MIL-STD-1686C, NAVAIR 01-1A-23, NAVSUP Publication 484, NAVSUP Publication 723, NAVAIR 17-600-193-6-2, and MIL-HDBK-773, OPNAVINST 2450.2, NAVAIR 00-80T-117, NAVSUP Publication 700, OPNAVINST 3750.6R, and NAVSEA OP 3565 are readily available and complied with.
- c. Provide indoctrination and refresher training to all personnel who handle, inspect, package, or transport ESDS items. MIL-HDBK-263B contains information to aid in developing appropriate lessons.
- d. Provide EMI/ESD indoctrination and refresher training to all maintenance personnel.
- f. Conduct periodic work area reviews with the Program Monitor and Work Center EMI/ESD Petty Officers, ensuring sufficient ESD protective materials are available and being used.
- g. Ensure ESD protected work areas are properly maintained.
- h. Maintain a program file to include:
 - (1) Applicable POCs.
 - (2) List of personnel who completed training.
 - (3) Program related correspondence and message traffic.
 - (4) Applicable references and cross reference locator sheets.

10.21.3.4 The Program Coordinator (Supply only) shall:

- a. Be responsible to the Supply Officer for implementing the EMI/ESD Program and enforcing compliance.
- b. Ensure this instruction and MIL-HDBK-263B, MIL-STD-1686C, NAVAIR 01-1A-23, NAVSUP Publication 484, NAVSUP Publication 723, NAVAIR 17-600-193-6-2, MIL-HDBK-773, OPNAVINST 2450.2, NAVAIR 00-80T-117, NAVSUP Publication 700, OPNAVINST 3750.6R, and NAVSEA OP 3565 are readily available and complied with.
- c. Provide EMI/ESD indoctrination and refresher training to all personnel who handle, inspect, package, or transport ESDS items. MIL-HDBK-263B contains information to aid in developing appropriate lessons.
- d. Conduct periodic work area reviews with the Supervisor, Program Monitor, and Work Center EMI/ESD petty officers or NCOs, ensuring sufficient ESD protective materials are available and being used.
- e. Ensure ESD protected work areas are properly maintained.
- f. Maintain a program file to include:

- (1) Applicable POCs.
 - (2) List of personnel who completed training.
 - (3) Program related correspondence and message traffic.
 - (4) Applicable references and cross reference locator sheets.
- g. Ensure ESDS items are properly packaged per MIL-HDBK-773 prior to shipment.
 - h. Ensure personnel are properly trained prior to handling ESDS items.
 - i. Ensure personnel are properly trained in the prevention of EMI.
 - j. Ensure personnel monitoring the EMI/ESD program are properly trained as applicable to their areas of responsibility.

10.21.3.5 The QA Officer shall designate, in writing via the MMP/SME listing, an avionics QAR/QA Specialist as the EMI/ESD Program Monitor. This assignment does not preclude other QARs/QA specialists from monitoring this program but places the overall responsibility with one individual.

10.21.3.6 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Ensure all QARs/QA specialists are trained in EMI/ESD as applicable to their areas of responsibility.
- c. Coordinate with the Program Manager and Program Coordinator to resolve packaging, handling, and transportation discrepancies.
- d. Assist in preparing **R} DRs**.

10.21.3.7 Division officers shall ensure division personnel comply with EMI/ESD Program directives and procedures.

10.21.3.8 Work center supervisors shall:

- a. Ensure compliance with the EMI/ESD Program within the work center **A}** and all user preoperational requirements.
- b. Return ESDS items to Supply packaged per the requirements of [paragraph 10.21.4.1](#).
- c. Report, via SDR, any ESDS items received without appropriate packaging per NAVSUP Publication 484, NAVSUP Publication 700, NAVSUP Publication 723, and MIL-HDBK-773.

10.21.3.9 Work center EMI/ESD petty officers or NCOs/D-level equivalent shall:

- a. Ensure EMI/ESD Program and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.

NOTE: O-level and I-level activities shall document training using the NAMP Indoctrination Training sheet ([Figure 10.1-5](#)) in the individual's qualification/certification record.

- b. Ensure compliance with the EMI/ESD Program within the work center.

c. Ensure all ESDS items remain in their protective packaging when AWM, AWP, or in long term local storage until installed or ready for test, repair, inspection, or assembly at an ESD protected work area.

d. Ensure all test equipment, aircraft, SE, and personnel are grounded to an authorized ground prior to handling or working with unprotected ESDS items. All applicable items and personnel must be connected to an authorized ground when ESDS items are opened for repair or inspection.

NOTE: Handling WRAs identified by the ISSC as susceptible to ESD or electromagnetic induction events transmitted through uncapped connector receptacles shall ensure ESD conductive shunt caps are affixed to WRA connectors whenever associated aircraft harness connectors are removed.

e. Ensure, after opening a package containing an ESDS item to verify its contents, the ESDS item is properly repackaged and labeled.

NOTE: All components, circuit boards, modules, subsystems, or systems classified ESD require ESD packaging and caution labels.

10.21.3.10 Maintenance Control/Production Control and Material Control Division personnel shall:

a. Return ESDS items to Supply packaged per the requirements of [paragraph 10.21.4.1](#).

b. Affix appropriate ESD caution labels, as identified in NAVAIR 01-1A-23, to all packages containing ESDS items. Opened packages shall have new ESD caution labels affixed before transporting. Common ESD Protective Materials ([Figure 10.21-1](#)) provides NSNs for ESD caution labels.

NOTE: All components, circuit boards, modules, subsystems, or systems classified ESD require ESD packaging and caution labels.

c. Report, via SDR, any ESDS items received from stock without appropriate packaging per NAVSUP Publication 484, NAVSUP Publication 700, NAVSUP Publication 723, and MIL-HDBK-773. When improperly packaged items are received from another command, their QA Division shall be notified.

d. Consider electronic assemblies exposed to ESD or handled without protective equipment as non-RFI. Such items shall be tested prior to declaring as RFI.

e. Coordinate pilot/aircrew/maintenance personnel debriefs when EMI related discrepancies are reported.

10.21.4 Procedures

10.21.4.1 Protection of ESDS WRAs and SRAs.

10.21.4.1.1 For uninstalled WRAs, cover all external cannon plugs and connector pins with original metal cannon plug, connector caps, ESD conductive plug caps, or grid tape. If authorized caps, plugs, and grid tape are not available, an inner layer of anti-static pink poly material and an outer layer of static shielding material may be used to enclose the entire WRA. [Figure 10.21-1](#) lists common materials used for ESD protection.

NOTE: A current and more extensive list of ESD protective materials, is provided at <https://www.asemicap.net/>.

10.21.4.1.2 Once a WRA has all covers installed and approved conductive caps and tape applied to all exposed plugs and connectors, it is considered ESD safe and, if necessary, can be cushioned with clear poly bubble wrap and secure with masking tape for local storage and transport.

10.21.4.1.3 Affix ESD caution labels to or near the face of all ESDS WRAs to aid in ready identification of those items. Common ESD Protective Materials ([Figure 10.21-1](#)) provides an NSN for this label.

10.21.4.1.4 Maintain ESDS items in protective packaging until ready for use or opened at an ESD protected work area. Protect retrograde items immediately upon removal from aircraft or equipment.

10.21.4.1.5 Wrap SRAs with an inner layer of anti-static pink poly material and an outer layer of static shielding material. This protection may be afforded by one bag with both characteristics.

NOTE: Antistatic (static dissipative) pink poly bubble wrap, bags and caps are not static shielding materials; they provide physical protection only.

10.21.4.1.6 ESD caution labels must be affixed to the outside of the static shielding materials. Other nonstatic producing seals shall not be used unless ESD caution labels are not available.

10.21.4.1.7 Keep ESD protective materials in place while carrying uninstalled ESDS items from one location to another, including hangar decks, flight lines, flight decks, work centers, and AMSU.

NOTE: Some ESD protective materials, for example, conductive caps and anti-static shielding bags, constitute a FOD hazard and shall be positively controlled on flight lines and flight decks. COMNAVAIRSYSCOM has determined ESD grid tape is not a FOD hazard and is the preferred material to be used for ESDS item protection in those areas.

10.21.4.1.8 Construct or modify all maintenance and repair kits containing ESDS items to physically surround ESDS items with a barrier of conductive material. Kits include in-flight troubleshooting kits, squadron pickup kits, and maintenance assist kits used by I-level technicians. Protecting individual kit items provides a minimum acceptable level of ESD protection.

10.21.4.2 ESD Protected Work Area Requirements for IMAs/FRC activities:

a. Handle unprotected ESDS items only at ESD protected work areas that comply with requirements identified in MIL-HDBK-263B, NAVAIR 01-1A-23, and NAVAIR 17-600-193-6-2.

b. Identify all ESD protected work areas with signs or posters per NAVAIR 01-1A-23.

c. ESD protected work areas will contain, at a minimum, a conductive or dissipative work surface, either hard laminate or soft mat, and appropriate quantities of personnel wrist straps. The work surface and wrist strap shall be grounded per NAVAIR 17-600-193-6-2.

WARNING: FOR PERSONNEL SAFETY, EQUIPMENT MUST BE DE-ENERGIZED WHEN PERSONNEL WRIST STRAPS ARE CONNECTED TO GROUND AND SRAS OR COMPONENTS ARE BEING REMOVED OR REPLACED.

d. Use conductive floor matting only where carpeting is installed or personnel wrist straps do not provide adequate protection. If wrist straps cannot be used, personnel must wear heel grounders.

WARNING: FOR PERSONNEL SAFETY, ALL ENERGIZED EQUIPMENT MUST BE ISOLATED FROM THE CONDUCTIVE WORK STATION MAT AND OTHER CONDUCTIVE MATERIALS.

e. Safety floor matting may be used to provide electrical safety when an area is used for both troubleshooting energized equipment and handling ESDS items. All ESD control and prevention procedures must be followed when handling ESDS items on or around the test bench, for example, properly installed ESD mat and wrist straps.

f. No prime generators, as defined in NAVAIR 01-1A-23, shall be closer than 24 inches to an ESD protected work area.

g. Perform periodic maintenance and preoperational checks for permanent ESD protected work areas per NAVAIR 17-600-193-6-2. For commands which maintain constant monitor work stations, periodic maintenance shall be performed per the manufacturer's specifications.

h. Supply personnel shall have an ESD protected work area or portable ESD station and be trained in its use.

10.21.4.3 ESD Protected Work Area Requirements for O-level:

a. Handle unprotected ESDS items only at ESD protected work areas that comply with requirements identified in MIL-HDBK-263B and NAVAIR 01-1A-23.

b. Activities which, at any time, remove or replace SRAs or components within WRAs shall have ESD protected work areas, or, as a minimum, a portable ESD station, in applicable work centers.

WARNING: FOR PERSONNEL SAFETY, EQUIPMENT MUST BE DE-ENERGIZED WHEN PERSONNEL WRIST STRAPS ARE CONNECTED TO GROUND AND SRAS OR COMPONENTS ARE BEING REMOVED OR REPLACED.

c. Use portable ESD field service kits when removing or replacing individual SRAs or components onboard aircraft during inflight or ground maintenance. Ground work mats and wrist straps against the aircraft frame.

d. Material Control personnel shall have an ESD protected work area or portable ESD station and to be trained in its use.

e. Detachments deployed aboard air capable ships shall have, as a minimum, an ESD field service kit if maintenance requires removing or replacing SRAs or components within WRAs.

f. Perform periodic maintenance and preoperational checks for permanent ESD protected work areas per NAVAIR 17-600-193-6-2.

g. Identify all ESD protected work areas with signs or posters per NAVAIR 01-1A-23.

10.21.4.4 EMI Reporting

10.21.4.4.1 Most EMI discrepancies discovered in flight cannot be duplicated on ground checks; therefore it is essential that ground maintenance personnel receive a thorough debrief from pilots and aircrews when EMI occurs. When attempting to duplicate an EMI incident on the ground, all known circumstances must be duplicated as close as possible. EMI historical data is available from the EMI Problem Database, located <https://www.asemicap.net/>.

10.21.4.4.2 All EMI incidents shall be reported to higher authority via hazardous material report per this instruction and OPNAVINST 3750.6.

Common ESD Protective Materials

The following part numbers/NSNs are provided as a sample of available ESD protective material. The list is not intended to be all inclusive, but to provide a foundation to assist activities in obtaining required protective materials.

Cushioning Material (Bubble Wrap) (PPP-C-795C) Class II Anti-Static (pink colored)			
	NSN		NSN
Small Bubble Wrap	8135-00-926-8991	Large Bubble Wrap	8135-00-142-9004
	8135-01-087-3603		8135-01-235-8057
	8135-01-088-3846		
ESD Conductive Grid Tape			
	NSN		NSN
P/N M1007 CAGE OKWD6	5999-01-378-8454	P/N HS 3462 CAGE OUK98	5999-01-465-4563
P/N 1604-20 CAGE IFWMD	5999-01-465-4465		
Anti-Static Bags (Pink Poly) P/N RCAS2400			
SIZE	NSN	SIZE	NSN
4 X 6	8105-01-120-3380	12 X 16	8105-01-120-3372
5 X 8	8105-01-096-9527	18 X 18	8105-01-119-8109
10 X 16	8105-01-120-3375		
ESD Caution Labels			
SIZE	NSN	SIZE	NSN
2 X 2	7540-01-109-8815	4 X 4	7540-01-110-4906
2 X 2	7960-01-170-3499		
ESD Caution Label - Face of WRA			
SIZE	NSN		
2 X 2	7690-01-077-4894		
Static Shielding Bags P/N 2100			
SIZE	NSN	SIZE	NSN
4 X 6	8105-01-217-7595	12 X 16	8105-01-218-5326
5 X 8	8105-01-217-7588	18 X 18	8105-01-218-5323
10 X 12	8105-01-217-4312		
ESD Protected Work Area Work Surfaces			
SIZE	NSN	SIZE	NSN
24 X 36	4940-01-250-4235	N/A	4940-01-250-4237
24 X 36	4940-01-250-4236		
Conductive Foam			
SIZE	NSN	SIZE	NSN
MIL-P-15280	5640-00-237-4786	PPP-C-1842	8135-01-087-3602
ESD Personnel Wrist Straps			
	NSN		NSN
	4240-01-063-4880		4240-01-165-8866

Figure 10.21-1: Common ESD Protective Materials

10.22 Miniature/Microminiature (2M) Program (NAMPSOP)

10.22.1 Introduction

10.22.1.1 The 2M Program establishes policy, responsibilities, and requirements for the repair of miniature/microminiature electronic assemblies and the certification/recertification and training of personnel.

10.22.1.2 References:

- a. NAVAIR SE-004-PQS-000, Certification Manual for 2M/MTR Program.
- b. NAVAIR 01-1A-23, Standard Maintenance Practices Miniature/Microminiature (2M) Electronic Assembly Repair.
- c. NAVAIR 17-15-99, PRC-2000-2M System, Electronic Rework Power Unit.
- d. NAVAIR 17-600-193-6-2, PRC-2000-2M System Maintenance Requirements Cards.

10.22.2 Discussion

10.22.2.1 The complexity of electronic assemblies and the sensitivity of their components to physical and electrical overstress requires repairs be performed by formally trained and certified 2M repair technicians at designated 2M activities. NAVAIR SE-004-PQS-000 reflects the combined COMNAVAIRSYSCOM/COMNAVSEASYSYSCOM 2M certification and recertification requirements. It provides guidance to TYCOMs and I-level activities to manage and monitor 2M repair facilities and technicians.

10.22.2.2 2M repairs shall be accomplished only by activities which have been designated 2M capable by the cognizant ACC/TYCOM.

10.22.2.3 COMNAVAIRSYSCOM approved 2M SE will be added to the IMRL for tracking and accountability purposes. I-level activities assigned electronic assembly repair responsibilities will be provided with logistic support to include test equipment for verification testing and fault isolation, documentation, spare parts, and training.

10.22.2.4 I-level repair of electronic assemblies is authorized by establishing COMNAVAIRSYSCOM assigned SM&R codes or by COMNAVAIRSYSCOM authorization to perform D-level repairs. Both methods are based on economic and non-economic considerations which reflect fleet operational readiness requirements. Authority to repair D-level electronic assemblies will be per [Chapter 3](#).

10.22.2.5 COMNAVAIRSYSCOM (AIR-6.7) is responsible for aviation 2M Program requirements. The ISEA responsible for the Navy's 2M Program is COMMANDER, CRANE DIVISION, NAVAL SURFACE WARFARE CENTER, CODE 6083, BLDG 3330 NORTH, 300 HWY 361, CRANE IN 47522-5001.

10.22.2.6 All letters of designation, qualification, certification, course completion, medical certification, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.22.3 Responsibilities

10.22.3.1 ACC/TYCOM

The ACC/TYCOM shall:

a. Ensure AMMT 2M evaluators maintain currency in 2M programs, policies, procedures, and training techniques to provide assistance to fleet activities in 2M matters. AMMT 2M evaluator requirements are in NAVAIR SE-004-PQS-000.

b. Validate 2M repair sites at 18-month intervals to ensure compliance with the 2M Program, using CSEC. Intervals may be extended to 24 months to facilitate scheduling. CSEC shall include the minimum requirements of NAVAIR SE-004-PQS-000.

10.22.3.2 I-Level Activities

10.22.3.2.1 The MO shall:

- a. Develop local command procedures (as required) per [Appendix D](#).
- b. Designate, in writing via the MMP, a responsible senior technician possessing NEC 9526, normally the 2M Work Center Supervisor, as the 2M Program Manager.
- c. Designate a 2M Technician Recertifier using the 2M Technician Recertifier Designation ([Figure 10.22-1](#)).
- d. Endorse all local 2M technician recertifications per NAVAIR SE-004-PQS-000.
- e. Ensure the 2M Technician Recertifier conducts 2M site validations and technician recertifications upon request from outside activities (both aviation and nonaviation). NAVAIR SE-004-PQS-000 provides guidance for completing these requirements.

10.22.3.2.2 The Program Manager shall:

NOTE: A} Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

- a. Provide 2M Program indoctrination and follow-on training (as required).
- b. Be knowledgeable of NAVAIR SE-004-PQS-000, NAVAIR 01-1A-23, NAVAIR 17-15-99, NAVAIR 17-600-193-6-2, and this instruction.
- c. Ensure a PM program is in effect, and Work Center 69B and satellite 2M stations are maintained per NAVAIR 17-15-99 and NAVAIR 17-600-193-6-2 (as applicable).
- d. Ensure only NAVAIR 01-1A-23 authorized materials are used during 2M repair.
- e. Coordinate with the 2M Technician Recertifier to develop local training for certified personnel to practice 2M repair techniques not encountered during routine maintenance. NAVAIR SE-004-PQS-000 identifies tasks required for recertification. These tasks should be used as minimum requirements for training.
- f. Coordinate with the 2M Technician Recertifier to maintain a record of all 2M certified technicians. Forward approved 2M technician recertifications for inclusion in members' service records.
- g. Ensure the command has adequate QA inspector expertise, for conducting 2M repair inspections, with at least the same skill level as the repair work being inspected. Because a large percentage of 2M repair is at the microminiature level, 2M CDIs should be microminiature certified.
- h. Ensure all 2M CDIs are familiar with specifications and standards, including projects not encountered during normal maintenance. CDIs shall demonstrate knowledge of 2M standards, procedures, and techniques and their relationship to repairs, QA, and reliability.

NOTE: The objective of 2M training is to ensure technicians retain full 2M skills and dexterity necessary to provide quality 2M. Training projects should be performed using non-RFI electronic assemblies. DRMO may be a source for 2M training material.

i. Maintain a program file to include:

(1) Record of 2M training conducted (to include training and recertification).

(2) Listing of 2M qualified technicians, including name, rate, work center, certification level, next recertification date, and projected rotation date.

(3) Listing of 2M stations, including equipment location and serial numbers.

(4) Applicable POCs.

(5) Program related correspondence and message traffic.

(6) Applicable references or cross reference locator sheets.

(7) Record of inventoried 2M workstations per NAVAIR SE-004-PQS-000, Appendix F.

j. Use CSEC information and reports to identify areas of concern and determine corrective action.

10.22.3.2.3 The QA Officer shall designate, in writing via the MMP, an avionics QAR as the 2M Program Monitor. This assignment does not preclude other QARs from monitoring this program but places the overall responsibility with one individual.

10.22.3.2.4 The Program Monitor shall:

a. Perform audits using CSEC per [paragraph 10.7](#).

b. Review applicable CSEC information and reports and provide appropriate recommendations to the chain of command.

c. Assist in preparing NAMDRP reports.

d. Verify instructions are complied with and 2M related problems immediately reported.

e. Verify the 2M Work Center Supervisor and one QAR possess NEC 9526 or MOS 6423 (Microminiature Electronic Repair Technician level).

NOTES: 1. Marine Corps IMAs may assign any 64XX SNCO as a QAR.

2. A CDQAR who is microminiature qualified will be assigned to monitor the 2M Program whenever the 64XX SNCO assigned to QA has not previously held MOS 6423.

10.22.3.2.5 The 2M Technician Recertifier shall:

a. Be an E-6 or above with NEC 9503 for Navy recertifiers. For Marine Corps, recertifiers shall be an E-5 or above with MOS 6423. All must meet NAVAIR SE-004-PQS-000 requirements.

b. Be a microminiature CDI.

c. Maintain a 2M Technician Recertifier file per NAVAIR SE-004-PQS-000 to include:

(1) Copies of performance information memorandums.

- (2) 2M recertification performance tests.
- (3) Tracking chart for certification/recertification of all 2M technicians.
- d. Ensure all 2M technicians can satisfactorily perform any 2M task authorized for their certification level and are able to consistently perform quality 2M repairs.
- e. Assist the Program Manager in developing and implementing 2M training.
- f. Conduct 2M technician recertifications at outside activities (both aviation and nonaviation) on an as needed basis.
- g. Issue 2M Certification Identification Cards to recertified 2M technicians and report completion of 2M personnel recertification in the 2M database per NAVAIR SE-004-PQS-000.

10.22.3.2.6 Work center supervisors shall ensure:

- a. Miniature/Microminiature Program and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented on the NAMP Indoctrination Training sheet (Figure 10.1-5) in the individual's qualification/certification record.
- b. Only 2M certified technicians perform electronic assembly repair.
- c. Sufficient expertise is available for conducting all required electronic assembly repair inspections.
- d. 2M technicians complete training conducive to maintaining required certification levels.
- e. ESD protective measures are observed while performing 2M repairs per NAVAIR 01-1A-23.
- f. Each 2M workstation has the minimum required consumables, tools, and SE for miniature/microminiature repair capability per NAVAIR SE-004-PQS-000, Appendix F.

NOTE: 2M repair is a skill intensive task. Maintaining acceptable skills and dexterity requires continuous training/practice which shall encompass all procedures authorized for each individual's 2M certification level.

10.22.3.3 D-Level Activities

D-Level activities shall:

- a. Ensure a comprehensive 2M certification program is developed, implemented, and administered. References in paragraph 10.22.1.2 and this chapter shall be used as guidance for establishing minimum requirements of an effective 2M certification program. Requirements, other than those noted within this instruction shall be in compliance with higher level directives.
- b. Develop local command procedures (as required) per Appendix D.
- c. Designate a 2M Instructor/Technician Recertifier per NAVAIR SE-004-PQS-000.
- d. Ensure the 2M Instructor/Technician Recertifier conducts 2M site validations and technician recertifications upon request from outside activities (both aviation and nonaviation). NAVAIR SE-004-PQS-000 provides guidance for completing these requirements.

e. Ensure 2M Program and follow-on training is provided to personnel. Training shall include personnel responsibilities and shall be documented in the individual's training record.

f. Ensure all personnel with 2M program responsibilities are knowledgeable of NAVAIR SE-004-PQS-000, NAVAIR 01-1A-23, NAVAIR 17-15-99, NAVAIR 17-600-193-6-2, and this instruction.

g. Ensure a Periodic Maintenance program is in effect, and all 2M Work stations, including satellite 2M stations are maintained per NAVAIR 17-15-99 and NAVAIR 17-600-193-6-2 (as applicable).

h. Ensure only NAVAIR 01-1A-23 authorized materials are used during 2M repair.

i. Establish local training for certified personnel to practice 2M repair techniques not encountered during routine maintenance. NAVAIR SE-004-PQS-000 identifies tasks required for recertification. These tasks should be used as minimum requirements for training.

NOTE: 2M repair is a skill intensive task. Maintaining acceptable skills and dexterity requires continuous training/practice which shall encompass all procedures authorized for each individual's 2M certification level. Training projects should be performed using non-RFI electronic assemblies. DRMO may be a source for 2M training material.

j. Maintain a record of all 2M certified technicians. A copy of the approved 2M technician re-certification shall be retained within the individual's qualification/certification record.

k. Ensure the command has adequate QA inspector expertise, for conducting 2M repair inspections, with at least the same skill level as the repair work being inspected. Because a large percentage of 2M repair is at the microminiature level, 2M inspectors should be microminiature certified.

l. Ensure all 2M inspectors are familiar with specifications and standards, including projects not encountered during normal maintenance. Inspectors shall demonstrate knowledge of 2M standards, procedures, and techniques and their relationship to repairs, QA, and reliability.

m. Ensure management and other departments, as appropriate, review records and statistics which indicate 2M program effectiveness.

n. Ensure the 2M program is adequately monitored for compliance with all related instructions and 2M related problems are immediately reported and corrected.

o. Ensure medical evaluation and safety determination services are obtained as required to support continued safe operation of the 2M work areas.

p. Assist in preparing NAMDRP reports.

q. Ensure 2M Technician Recertifiers meet NAVAIR SE-004-PQS-000 requirements.

r. Ensure all 2M technicians can satisfactorily perform any 2M task authorized for their certification level and are able to consistently perform quality 2M repairs.

s. Issue 2M Certification Identification Cards to recertified 2M technicians and report completion of 2M personnel recertification in the 2M data base per NAVAIR SE-004-PQS-000.

t. Ensure Only 2M certified technicians perform electronic assembly repair.

u. Ensure ESD protective measures are observed while performing 2M repairs per NAVAIR 01-1A-23.

v. Ensure each 2M workstation has the minimum required consumables, tools, and SE for miniature/microminiature repair capability per NAVAIR SE-004-PQS-000, Appendix F.

10.22.4 2M Certification/Recertification

10.22.4.1 Initial miniature certification will be granted upon completion of Miniature Electronics Repair course (Course A-100-0072).

10.22.4.2 Initial microminiature certification will be granted upon completion of Microminiature Electronics Repair course (Course A-100-0073) and the prerequisite Miniature Electronic Repair course (Course A-100-0072).

10.22.4.3 Skill proficiency of 2M technicians shall be evaluated every 18 months using NAVAIR SE-004-PQS-000.

10.22.4.4 2M Instructors/Technician Recertifiers shall be recertified every 18 months per NAVAIR SE-004-PQS-000.

10.22.4.5 Activities without 2M Technician Recertifiers shall request such service from the nearest activity authorized to conduct 2M technician recertifications.

10.22.4.6 ACCs/TYCOMs will be consulted when 2M technician recertifications must be requested from off-station.

From: Department Head
To: 2M Technician Recertifier

Via: (1) Division Officer
(2) 2M Program Manager
(3) Work Center Supervisor

Subj: 2M TECHNICIAN RECERTIFIER DESIGNATION

Ref: (a) COMNAVAIRFORINST 4790.2
(b) NAVAIR-01-1A-23
(c) NAVAIR SE-004-PQS-000

1. Per references (a), (b), and (c) , you are authorized to conduct 2M technician performance evaluation and submit recertification recommendations, based upon the skill and dexterity a technician displays.
2. Your responsibilities include:
 - a. Conduct 2M personnel recertification and training per reference (a).
 - b. Ensure all appropriate 2M projects are satisfactorily completed per reference (b).
 - c. Conduct 2M training designated to ensure skill and dexterity of all 2M technicians are retained.
 - d. Forward recommendations for recertification to the Department Head per reference (c).
3. I fully understand my duties and responsibilities as the 2M Technician Recertifier.

_____ Assignee Signature	_____ Date
_____ Work Center Supervisor Signature	_____ Date
_____ Division Officer Signature	_____ Date
_____ Program Manager Signature	_____ Date
_____ Department Head Signature	_____ Date

Original to:

Individual's Qualification/Certification Record

Figure 22-1: 2M Technician Recertifier Designation

10.23 Gas Turbine Engine Test System (GTETS) Operator Training and Certification Program (NAMPSOP)

10.23.1 Introduction

10.23.1.1 The Gas Turbine Engine Test System Operator Training and Certification Program establishes policy, responsibilities, and requirements for the training and licensing of jet engine test facility operators and qualifiers.

10.23.1.2 References:

- a. NAVAIRNOTE 4700, Gas Turbine Engine Three Degrees of Intermediate Maintenance Activity Assignments.
- b. NAVPERS 18068F, Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards.
- c. Applicable Gas Turbine Engine Test System MIMs/MRCs.
- d. N88-NTSP-A-50-8616B/A, Approved Navy Training System Plan for the Gas Turbine Engine Test Systems.

10.23.2 Discussion

10.23.2.1 Proper operation of gas turbine engine test facilities is paramount to safe and efficient aircraft engine maintenance. Improper training and operation can result in mishaps, reduced operational readiness and unnecessary engine replacement costs. All gas turbine engine test facility (test cell) operators and qualifiers must be knowledgeable of operational characteristics, safety precautions and emergency procedures to significantly reduce the potential for personal injury and equipment damage.

10.23.2.2 Operator training requirements for GTETS are unique. GTETS operators and qualifiers are certified to operate a particular test system/test cell and type engine.

10.23.2.3 Engine test system training will be provided by a NATEC JTS representative, or a senior petty officer/NCO/civilian technician certified as a GTETS Operator and designated in writing as a GTETS Qualifier on the specific test cell and type engine.

10.23.2.4 I-level/FRC repair of aircraft engines is authorized by establishing COMNAVAIRSYSCOM-assigned SM&R codes or by COMNAVAIRSYSCOM authorization to perform D-level repairs. Both methods are based on economic and non-economic considerations, which reflect fleet operational readiness requirements.

10.23.2.5 Navy ashore and afloat test cells are being replaced with commercial off the shelf computer controlled facilities, referred to as JETI (Jet Engine Test Instrumentation) for turbo-fan type engines, SETI (Shaft Engine Test Instrumentation) for turbo-shaft type engines, and TPTI (Turbo Prop Test Instrumentation) for turbo-prop engines. All models of the new test cell (shipboard, shore-based and portable applications) will have identical instrumentation which will aid in standardizing engine training and operation.

10.23.2.6 All letters of certification and designation, qualification syllabuses, course completion certificates, and completed maintenance related PQS shall be filed in the individual's qualification/certification record.

10.23.3 Responsibilities

10.23.3.1 COMNAVAIRSYSCOM shall:

- a. Be responsible for the development, update, and distribution of the Navy Training Systems Plan for the Gas Turbine Engine Test Systems (N88-NTSP-A-50-8616B/A).
- b. Develop, update and distribute, via NATEC and TYCOMs, GTETS Operator OJT Handbooks per N88-NTSP-A-50-8616B/A.
- c. Ensure a CSEC is developed and updated for the proper monitoring of this program.

10.23.3.2 ACC/TYCOM shall:

- a. Evaluate all activities operating GTETS for compliance of operator training and certification, and qualifier designation, as well as proper safety operating procedures.
- b. Inspect individual qualification/certification records and EDVR to ensure all aircraft engine test cell operators qualified for 12 months or longer possess NEC 6422/MOS 6023 or an artisan equivalent series designation.

10.23.3.3 The MO/Production Officer shall:

- a. Designate, in writing via the MMP/SME Listing, the Power Plants Division Officer/QA Specialist as the GTETS Operator Training and Certification Program Manager/Coordinator.
- b. Develop local command procedures for certification/recertification per [Appendix D](#). Local command procedures will include OJT syllabuses tailored to each activity's peculiar engine test system and differentiate operation for each type engine for the purpose of certifying GTETS Operators.
- c. Designate, in writing, GTETS Qualifiers. Prior to designation, GTETS Qualifiers shall be trained and recommended by a NATEC/FRC JTS representative for the test system and type engine. Previous training by NATEC/FRC for initial certification as a GTETS Operator does not satisfy this requirement.
- d. Certify, in writing, GTETS Operators and endorse GTETS Operator recertifications.
- e. Suspend GTETS Operator certifications when a mishap involving injury to a person or when damage occurs to an engine or equipment until an investigation is completed and responsibility determined. Reinstate the certification if the operator is deemed "not at fault."
- f. Revoke GTETS operator certification when the operator:
 - (1) Misuses or abuses GTETS equipment.
 - (2) Displays unsafe operator habits or behavioral traits.
 - (3) Is involved in an accident or incident and the resulting investigation determines negligence.
 - (4) Is cited for significant or recurring safety infractions.
- g. Submit a Navy Enlisted Classification Code Change Recommendation (EPMAC 1221/2) for all individuals trained and certified as GTETS Operators (IMAs only).

10.23.3.4 The Program Manager/Coordinator shall:

NOTE: A) Upon designation as Program Manager, a self-audit shall be performed within 30 days and annually thereafter using the CSEC. The most current self-audit shall be retained within the program binder.

a. Manage the GTETS Operator Training and Certification Program. In the event of conflict between this instruction and another instruction/manual, for clarification, or requests for deviation, contact the respective TYCOM for guidance.

b. Provide GTETS Program indoctrination and follow-on training (as required).

c. Ensure an adequate number of GTETS Operators and GTETS Qualifiers (as required) are assigned, taking attrition into account.

d. Develop local (in-service) training lectures and local OJT training syllabuses for training and certification of GTETS Operators. The use of computer based training via the AMTCS and NATEC/FRC JTS representative lesson guides is highly encouraged. Marine Corps personnel will use the MATMEP individual qualification record for Aircraft Power Plant Test Cell Operator (MOS 6023).

e. Ensure all GTETS Operators/Qualifiers maintain proficiency per [paragraph 10.23.4](#).

f. Ensure that Navy and contracted GTETS Operators recertify every 24 months per [paragraph 10.23.4](#).

g. Ensure a minimum of one qualified test cell operator, one technician, and one safety observer are present during all aircraft engine operations, in addition to applicable fire bottle watches and support equipment operators.

h. Ensure SE used in support of GTETS operation is properly maintained and operated and SE operators possess valid USN Aviation Support Equipment Operator's Licenses (OPNAV 4790/102) per [paragraph 10.16](#).

i. Recommend to the MO/Production Officer, personnel demonstrating the knowledge, skill, and maturity to be designated as GTETS Qualifiers.

j. Prepare a checklist for start up, shutdown, and emergency procedures to be used during engine test system operation. The checklist will be available within the control cab and used by all operators.

k. Maintain a program file to include:

(1) Listing of GTETS Operators, including name, rate/rank, or series/grade (as applicable), specific test cell, type engine(s), date certified, next recertification date, and projected rotation date.

(2) Listing of GTETS Qualifiers, including name, rate/rank, or series/grade (as applicable), specific test cell, type engine(s), date designated, projected rotation date.

(3) Copy of GTETS Qualifier designation letters signed by the MO/Production Officer (may delegate signature authority).

(4) Copy of documentation from NATEC/FRC JTS representative identifying GTETS Qualifier training conducted for each qualifier assigned.

(5) Applicable POCs.

(6) Program related correspondence and message traffic.

(7) Applicable references or cross-reference locator sheets.

l. Use CSEC information and reports to identify areas of concern and determine corrective action.

10.23.3.5 The QA Officer shall designate, in writing via the MMP/SME Listing, a QAR/QA Specialist as the GTETS Training and Certification Program Monitor. This assignment does not preclude other QARs/QA Specialists from monitoring this program but places the overall responsibility with one individual.

10.23.3.6 The Program Monitor shall:

- a. Perform audits using CSEC per [paragraph 10.7](#).
- b. Review applicable CSEC information and reports and provide appropriate recommendations to the chain of command.
- c. Administer written certification and recertification examinations for GTETS Operators. (Any QAR/Training Management Office personnel from the activity can administer the written examination.)

10.23.3.7 The GTETS Qualifier shall:

- a. Be an E-5 or above with NEC 6422/MOS 6023, or a qualified artisan certified as an operator in the activity.
- b. Be certified on the test cell and type engine for which training is to be provided.
- c. Receive GTETS Qualifier training from a NATEC/FRC JTS representative and be thoroughly familiar with safety and emergency procedures.
- d. Administer practical certification and recertification examinations for GTETS Operators.
- e. Assist the program manager/coordinator in developing, implementing and tracking GTETS Operator proficiency training.
- f. Ensure GTETS Operators complete proficiency training conducive to maintaining required certification levels.

10.23.4 Certification

10.23.4.1 Formal local (in-service) training and OJT can be provided under the supervision of a NATEC JTS representative or designated GTETS Qualifier for the test cell and type engine regardless of command assigned. Training shall be obtained at the IMA/FRC or activities using the standardized training approved by the NTSP in conjunction with locally prepared site specific OJT. OJT syllabuses shall be developed and maintained by the program manager/coordinator, GTETS Qualifiers, and QA personnel and be approved for use by the MO/Production Officer. Marine Corps personnel will use the MATMEP individual qualification record for Aircraft Power Plant Test Cell Operator (MOS 6023).

10.23.4.2 NATEC on-site training can be provided by a NATEC JTS representative and is normally requested by the activity to be performed coincident with the initial installation and calibration of the test facility. NATEC on-site training can also be requested to improve technical knowledge and skill to improve operational readiness and allow for the maximum use of propulsion testing facilities, equipment and human resources across all IMA/COMFRC activities.

10.23.4.3 Upon completion of training, the nominee must satisfactorily complete a written exam administered by QA/Training Management Office and a practical exam (pass/fail) administered by a GTETS Qualifier or NATEC JTS representative. Both written and practical examinations shall be prepared by QA/Training Management Office, GTETS Qualifiers, or NATEC JTS representatives and maintained by

QA/Training Management Office. The MO/Production Officer will issue a letter of certification indicating the engine test system and type engine(s).

10.23.4.4 Navy and contracted GTETS Operators and Qualifiers are required to maintain proficiency for each type engine for which they are certified. As a minimum, GTETS Operators and Qualifiers will run any type/model aircraft engine each 90 days, and will run at least one engine for each type certified every 12 months. Engine runs for proficiency may be run on any type test cell with a certified operator for that test cell, and will be documented in the individual's qualification/certification record. Every attempt should be made to maintain proficiency on all type engines for safety and effectiveness. Failure to maintain proficiency on one type engine within a one-year period will result in loss of certification for that specific type engine.

10.23.4.5 Navy and contracted GTETS Operators will be recertified every 24 months. Recertification will consist of a written examination administered by QA/Training Management Office and a practical exam (pass/fail) administered by a GTETS Qualifier or NATEC JTS representative on any one type engine for which they are certified. Afloat activities that are unable to operate their test cell for extended periods of time (greater than 3 months) may perform their recertification practical exams at another activity with a NATEC JTS representative or GTETS Qualifier designated in writing for that type test cell. Additionally, for planning purposes and operational commitments, recertification exams can be completed up to 3 months prior to the GTETS Operator's certification expiration date. Recertification exams should place emphasis on safety and emergency procedures. GTETS Operators exceeding 24 months will not be considered certified until they have completed refresher training by a GTETS Qualifier or NATEC JTS representative and successfully completed a written and practical examination. GTETS Operators failing either the written or practical examinations will be required to complete refresher training or complete the entire OJT syllabus, as determined by the program manager/coordinator.

10.23.4.6 Prior to designation, GTETS Qualifiers shall be trained by a NATEC/FRC (D-level) JTS representative for the test system and type engine. Previous training by NATEC/FRC for initial certification as a GTETS Operator does not satisfy this requirement. GTETS Qualifiers are not required to recertify as GTETS Operators while assigned to the same command as long as proficiency is maintained per [paragraph 10.23.4.4](#).

10.23.4.7 Activities without GTETS Qualifiers may request such services from the nearest activity authorized to conduct GTETS Operator training for the same test system and type engine(s) being certified on.

10.23.4.8 Previously certified GTETS Operators may be certified at the discretion of the MO/Production Officer after successfully completing a written exam administered by QA/Training Management Office and a practical examination administered by a GTETS Qualifier or NATEC JTS representative. Previously certified GTETS Operators failing either the written or practical examinations will be required to complete refresher training or complete the entire OJT syllabus, as determined by the program manager/coordinator. Previous certification records shall be retained in the individual's qualification/certification record.

10.23.4.9 Locally developed OJT syllabuses will include, as a minimum, the following task/knowledge areas:

- a. Proper use of applicable test system and type engine MIMs.
- b. Engine test system instrumentation and controls.
- c. Gas turbine engine operating parameters and limitations.
- d. Engine test facility installed systems such as fuel, lubrication, engine start, fire extinguishing, vibration and temperature monitoring systems.

- e. Installation and inspection of engine on run trailer, including engine servicing and FOD prevention inspections.
- f. Pre-operational inspections of engine test system and engine per applicable MIMs/MRCs.
- g. Safety and responsibility briefs, including communications and hand signals to be used.
- h. Simulated emergencies, such as fuel spills/leaks, engine/propeller overspeed, engine fire, throttle input failure, unstable engine, and personnel injuries per applicable MIMs.
- i. Proper engine performance calculations and documentation.
- j. Post-operational inspections of engine test system and engine per applicable MIMs/MRCs.
- k. Engine and test system troubleshooting procedures per applicable MIMs.
- l. Minimum of two performance runs as the GTETS Operator under the direct supervision of a GTETS Qualifier or NATEC JTS representative prior to completion of the pass/fail practical examination. Personnel certified as GTETS Operators by a previous command on the same engine test system and type engine are not required to complete a performance run prior to taking the practical examination administered by a GTETS Qualifier or NATEC JTS representative.

NOTE: A} For non-GTETS test facilities refer to [Chapter 3](#).